

**THE TEXT IS FLY
WITHIN THE BOOK
ONLY**

745.1 L66

934216

Lewis

The romance of Textiles

745.1 L66

934216

Lewis

\$4.00

Art

The romance of Textiles

kansas city



public library

kansas city, missouri

Books will be issued only
on presentation of library card.

Please report lost cards and
change of residence promptly.

Card holders are responsible for
all books, records, films, pictures
or other library materials
checked out on their cards.

KANSAS CITY MO. PUBLIC LIBRARY



0 0001 4508916 5

THE ROMANCE OF TEXTILES



THE MACMILLAN COMPANY
NEW YORK • BOSTON • CHICAGO • DALLAS
ATLANTA • SAN FRANCISCO

MACMILLAN & CO., LIMITED
LONDON • BOMBAY • CALCUTTA
MELBOURNE

THE MACMILLAN COMPANY
OF CANADA, LIMITED
TORONTO



Stendid Coptic tapestry of the fourth to fifth century with the
traditional long-eared hare.

Courtesy Museum of Fine Arts, Boston.

The Romance of Textiles

THE STORY OF DESIGN
IN WEAVING

By

Ethel Lewis

New York

THE MACMILLAN COMPANY

1937

Copyright, 1937, by
THE MACMILLAN COMPANY.

All rights reserved—no part of this book
may be reproduced in any form without
permission in writing from the publisher,
except by a reviewer who wishes to quote brief
passages in connection with a review written
for inclusion in magazine or newspaper.

Set up and printed. Published October, 1937.

FIRST PRINTING.

PRINTED IN THE UNITED STATES OF AMERICA
BY THE STRATFORD PRESS, INC., NEW YORK

A textile is any stuff wrought on a loom

CONTENTS

<i>Chapter</i>	<i>Page</i>
I. The Art of Weaving in Early Egypt	1
II. The Little Known Fabrics of Other Early Civilizations	14
1. <i>The Textiles of Assyria and Babylonia</i>	14
2. <i>Crete, the Successor to Egypt</i>	19
3. <i>The Fabrics of Greece</i>	22
4. <i>Roman Textiles</i>	26
III. The Story of Silk	31
IV. Oriental Textiles	43
1. <i>The Art of Weaving in China</i>	43
2. <i>The Fabrics of Japan</i>	54
V. Cotton in India	59
VI. The Fabrics and Patterns of Persia	74
1. <i>During the Sassanian Era</i>	74
2. <i>Persia Under Moslem Rule</i>	79
3. <i>The Fabrics of the Sixteenth and Seventeenth Centuries</i>	83
VII. Coptic and Peruvian Textiles	88
1. <i>The Weaving of the Copts</i>	88
2. <i>Textiles of Peru</i>	99
VIII. Byzantine Patterns in Textiles	104
1. <i>Byzantium to the Twelfth Century</i>	104
2. <i>The Style of the Ottoman Empire</i>	112

<i>Chapter</i>	<i>Page</i>
IX. The Influence of Mohammed	115
1. <i>Early Moslem Art</i>	115
2. <i>Egypto-Arabic Fabrics</i>	119
X. The Textile Arts of Spain	126
XI. Saracenic Art in Sicily	140
XII. The Great Weaving Centers of Italy	150
1. <i>Lucca</i>	152
2. <i>Florence</i>	158
XIII. The Great Weaving Centers of Italy (Continued)	167
3. <i>Venice</i>	167
4. <i>Genoa</i>	176
XIV. The French Renaissance	182
XV. The Baroque Style of Louis XIV	193
XVI. Tapestries of France and Flanders	203
XVII. England's Textiles and Embroideries Up to 1700	220
XVIII. The Perfect French Fabrics of the Eighteenth Century	234
1. <i>The Rococo Style of Louis XV</i>	234
2. <i>The Classicism of Louis XVI</i>	242
XIX. English Chintzes and Linens	249
XX. Toile de Jouy	261

CONTENTS

ix

<i>Chapter</i>	<i>Page</i>
XXI. Fabrics of the Georgian Era	276
XXII. The Nineteenth Century Fabrics of France	289
1. <i>The Directoire Style</i>	289
2. <i>The Empire</i>	291
XXIII. American Weaves and Patterns	300
XXIV. Contemporary Fabrics and Fibres	318
XXV. A Glossary of Weaving	327
Bibliography	359
Index	365

ILLUSTRATIONS

A Coptic tapestry of the fourth-fifth century

Frontispiece

<i>Plate</i>	<i>Page</i>
1. Drawing of an early Egyptian loom from the tomb of Beni-Hassan	4
2. Tapestry-woven fish—probably Minoan	5
3. Minoan statuette	16
4. Greek vase showing costumes	17
5. Chinese silk robe	66
Detail of K'ossu	66
6. Indian palampore	67
7. Sassanian damask with hippocamp	82
8. Near-Eastern silk with hunter-king in rondel	83
9. Persian brocade of the seventeenth century	100
10. Coptic tapestry with winged horses	101
Peruvian tapestry with birds	101
11. Silk from Charlemagne's Tomb	112
12. Byzantine silk—Quadriga motif	113
13. Scutari velvet	116
14. Hispano-Moresque silk from Lérida collection	117
Thirteenth century Hispano-Moresque brocade	117
15. Spanish chasuble	128
16. Palermo silk of the thirteenth century	129
Sicilian silk with crested birds	129
17. Lucchese damask brocaded in gold	164
Cologne band dated 1497	164
18. Italian brocade of the thirteenth century	165

<i>Plate</i>	<i>Page</i>
19. Florentine velvet of fifteenth century	176
20. Ferronnerie velvet cope—fifteenth century	177
Venetian costume velvet—sixteenth century	177
21. Genoese <i>jardinière</i> velvet	180
22. Italian lady wearing mezzari	181
Genoese mezzari	181
23. Louis XIII brocade	192
24. Baroque brocade of Louis XIV	193
25. <i>Mille fleurs</i> tapestry	210
26. Seventeenth century Brussels tapestry	211
27. English crewel embroidery	226
28. Régence brocade	227
29. Chinoiserie silk—Louis XV	242
Brocade with fur design—Louis XV	242
30. Louis XVI striped silk	243
Chiné silk—Louis XVI	243
31. Brocaded silk designed by Philippe de la Salle	258
32. English cotton print	259
33. Design by William Morris	274
34. Toile de Jouy— <i>Le Petit Buveur</i>	275
—Classical medallions	275
35. Brocaded satin made at Spitalfields	290
36. Empire brocade	291
Directoire silk designed by Bony	291
37. Damask of Louis Philippe period	306
38. Early American hand-woven coverlet	307
Early American blue and white printed cotton	307
39. Contemporary design in wool	322
Hand-blocked linen on contemporary design	322
40. Close-ups—(A) plain weave, (B) rep weave, (C) twill weave, (D) satin weave	323

THE ROMANCE OF TEXTILES

CHAPTER I

The Art of Weaving in Early Egypt

HISTORICAL records can lead us back some thousands of years, but not to the very beginning of man's primitive needs. By the time he was ready to make note of how he lived, how he worked, and what he did for amusement, he had progressed far beyond anything elemental. He knew exactly where and how to secure food, how to make a shelter, and how to protect himself with clothing against the biting cold or the blazing sun. No one knows definitely when the first cloth was made but without doubt weaving was one of the earliest occupations for human hands. One historian assures us that weaving was known in Egypt six thousand years before Christ. Another feels equally certain that it was not until 5000 B.C. However, a difference of a few hundred years that long ago seems of less importance to us now than the difference between last year and this. We of the last few hundred years inherited weaving as an established practise and set about improving it without too deep inquiry into its origin. But let us delve a little into its past and see what a perfected art it had become when history was first recorded for future generations.

Weaving undoubtedly originated from necessity. The most primitive efforts were spent in the making of cord, and then followed interlacing of reeds and fibres to make mats and baskets. Later with the knowledge of the possibilities of flax and wool, the first looms came into existence. Probably the horizontal branch of a tree served to hold the warp threads

straight and stones tied to the lower ends held them taut. Or rows of pegs may have been driven into the ground and young saplings used to form an upright frame. The early hand-loom was only a step in advance of this primitive method and it, with its simple shuttle, was certainly the first complex mechanical contrivance of man. The horizontal foot-loom which soon followed because the hands were so over busy probably also originated in Egypt. The draw-loom, made in the first century before Christ, was the most important invention of its time, and created as much of a stir as did the Jacquard loom in the early nineteenth century.

Weaving was known from the Stone Age for examples of it have been found that are contemporary with crude stone implements. It, too, was crude but serviceable, and some pieces bore suggestions of ornamentation. Back in 1853-1854 a very hard and dry winter exposed to view the bottoms of several Swiss lakes. There the archeologists found evidences of the Early Lake Dwellers for which they had been seeking. They discovered what these ancient people used for food, how they built their houses, what agricultural tools they had made, and what clothing they wore. Flax in various stages was found, and bits of cloth made of bast and wool came to light.

The earliest existing fabric is of linen, which seems but natural, for flax has been cultivated for thousands of years in Egypt, and also in Assyria and Mesopotamia. To this very time it still grows wild in the great unpopulated spaces between the Persian Gulf and the Black and Caspian seas. According to Egyptian tradition it was sown in the late fall and pulled one hundred and ten days later. These early people knew also how to handle wool, for flocks were a part of every household. The softness and warmth of the thick covering on the sheep's back undoubtedly suggested the possibility of its use for clothing and the combing and matting of it into a thread for weaving was a natural development.

Cotton and silk came hundreds of years later. Authentic records prove that cotton was known in India as early as the eighth century B.C., and it is quite possible that Egypt was familiar with this plant at that date or even before. It was not, however, until the approach of the Christian era that cotton was considered as one of the important products of Egypt. The story of silk is told in another chapter and whatever silk may have been used in Egypt at any early date was undoubtedly grown and perhaps woven in China. The gorgeous silken robes of that famous and beautiful queen, Cleopatra, had been brought to Egypt by a long and hazardous journey from the Far East.

It is hard to realize that the art of weaving had reached perfection in Egypt some six thousand years ago. At that time they were able to weave as fine cloth for the proper entombment of their dead as has ever been woven. Mummy cloths, sometimes five feet wide and up to sixty feet long, were made of exquisite linen. One that is dated approximately 2500 B.C. has five hundred and forty warp threads to the inch. Up to some few years ago the finest that had ever been made by modern machinery was three hundred and fifty warp threads to the inch, and that the manufacturers did not consider practical.

It is due to the elaborate burial customs of the early Egyptians and also to their dry climate that these wondrously aged fabrics have been preserved. The exacting and thorough preparations which they deemed essential for rendering proper homage to the dead are as an open book to us today. The tombs of the kings, especially those in upper Egypt, which have been opened in recent years have laid before us the whole story of their lives and their customs. The body of the dead king, carefully embalmed, was swaddled in yards of delicate linen so carefully folded and interlaced as to form an intricate pattern. With jewels and royal insignia in place it was then laid in a fine mummy case made to conform to

the body. The exterior of the case was almost a duplicate of the mummy within. This case was then enclosed in another, and yet another, each one more beautifully decorated than the one before.

Not only did they believe that the body must be properly cared for, but with it must go such material things as might be needed in the next world. Included in the tomb were vessels for various uses, food and drink of many kinds, conveyances, utensils for work, and clothing. All of the textiles used for burial were of linen, not wool, for the Egyptians believed that while linen was the product of the cleanest plant of the field, wool had been produced by an animal and was therefore profane.

To appreciate thoroughly these arts of burial which have disclosed so much of the past to us one must be cognizant of the living conditions in early Egypt. First the country itself—a land of dramatic contrasts even today. The overwhelming sunshine bears down with a heavy heat like a hot pressing hand. At the other end of the scale are the deep cool shadows within the houses. There is the broad expanse of a great desert sea that leads one on through miles of sterility only to come upon a bit of lush tropical growth that is so green and so cool and so luxuriant, that it seems as unbelievable as the desert itself. In addition to these little oases there are the fertile river valleys, full of tropical verdure and gorgeous color. The drifting sands of the desert come as near as they can, encroaching whenever possible, but always leaving a sharp line of demarcation.

With such extravagances of nature to serve as a model the home-life of these people was almost as sharply contrasted. Courageous men, full of strength and purpose, went out boldly into the desert or into the fertile valleys. Pale and beautiful women stayed within the darkened houses and made themselves the most sheltered objects of all time. The houses were as full of contrast as the land itself, for blank

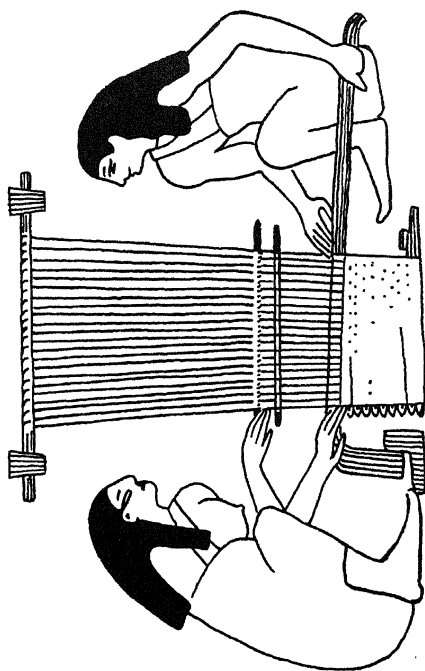


PLATE I. Drawing of an early Egyptian loom taken from the tomb
of Beni-Hasan.



PLATE 2. A fine wool tapestry from the pre-Christian era which was probably made in Crete. The carefully modeled vari-colored fish stands out sharply from a brilliant blue-green background.

Courtesy, Musée Historique des Tissus, Lyon.

outer walls without windows presented the best defense against the brittle brilliance of the sun. But inside, high ceilings, cool walls and floors and deep shadows meant rest and repose.

Though the very earliest fabrics were plain it was not long before ornamentation appeared. The patterns created in Egypt were distinctive though evolved in the same way as practically all early design. They grew from the need to represent in some way certain religious symbols. Carlyle has described decoration as the first spiritual want of man. And from that early need right down to our own times ornament has served as an expression of life. There is a story in each pattern, for every bit of ornamentation is a symbol of something, and each symbol is a record of history or experience. The development of pattern corresponds to the growth of civilization out of barbarism, for progress has ever been one of the guiding factors.

In Tolstoi's *Analysis of Art* he defines art as a means of communicating emotion. Perhaps that was the inspiration back of those early artists who built up a tradition that has left its mark on all the succeeding ages. Though there is a feeling of crudity to this early Egyptian art, it has a force that has made it live for centuries. Egyptian ornament is being used today, though when we transfer it to our contemporary designs we are apt to call it modern. Its richness and at the same time its severity has an appeal for us, and that all the symbolic motifs are shadowed by an unfamiliar religion has little significance. A design is not beautiful because it records something, but because there are certain forms, arrangements, symmetries and contrasts that are pleasing.

Religion has always been the greatest influence on art for it is usually through a people's efforts to make themselves dear to their gods that they create everlasting treasures. Whether they were the colorful pictorial representations of those early Egyptians or the overwhelming sculptured mag-

nificance of a Gothic cathedral, devotion to religion has always been the inspiration. It is a useless thing to compare the art of one country with that of another for there are always different conditions which have contributed certain forces and necessities to the creation. For instance, the fine simple art of Greece or the spiritual structures of the Gothic era would have little significance if set down in the midst of the burning light and uncompromising setting that is Egypt. The character of the art, like the people who create it, belongs to the nature of the land.

The early Egyptians had to make some compromise with their belief that even in the tomb one should have all the material comforts from this world which might be useful in the next. It was obviously not possible to include the bake-shop, the farmer and his products, the weaver at his loom and the whole retinue of household slaves. Therefore, these people and their work which were such important parts of daily life had to be rendered in miniature. Small models of shops, of ships, of animals and people were all included in the tomb so that he who was dead might be as well cared for in the next world as in this.

Pictorial representation of the living and of their daily tasks was another fetish of these people. The walls of the tombs were frequently covered with paintings which told a complete story. In the tomb of Beni Hassan which was built about 2500 B.C. there are many graphic paintings. One depicts the whole process of flax culture. Another pictures an upright loom with weavers engaged at their daily task. And the costumes of the people show the fabrics which were being built on that loom. Although the pictures are the flat representational form which is usually typical of Egyptian painting the patterns in the fabrics are discernible. There are stars, chevrons, frets or meanders, and other indefinite small conventional motifs. The colors were probably blue, brown and amber. These designs may have been painted or printed

on the garments, or the patterns darned in with colored linen threads. It was somewhat later when elaborately woven and embroidered costumes came into fashion.

From the year 1500 B.C. there are several examples of linen tapestry. The same fine linen that the Egyptians had been weaving for centuries provided the background for the lotus flowers and buds, the tree of life and other similar motifs which were added in color. These patterns were actually darned in, not woven, in red, blue and green, making a striking combination with the natural linen background. Though this was called a tapestry it must not be confused with the real tapestry weaves of the Copts some hundreds of years later. A few of these brightly patterned linen tapestries were found in the tomb of Thotmes IV (1466 B.C.) which was opened at Thebes in 1903. Other fabrics from the same era, now on exhibition in the Museum in Cairo, are ornamented with leaves, birds and the ever-present tree of life. They had a full palette of colors, too, for one fragment of cloth woven at that time with sixty warp threads to the inch has red, blue, yellow, green, brown and black in the design.

From the tomb of the young king Tut-Ankh-Amen, who lived and died in the fourteenth century B.C., have come some beautiful textiles. Most of his robes were of tapestry or needlework ornamented with colored linen threads and beadwork to make them more sumptuous and regal. His palace must have been filled with treasures for the arm chairs, the bed, the stools, and other bits of furniture taken from his tomb are beautiful in design and workmanship. Rare woods and rich stuffs were the order of the day for every Pharaoh loved magnificence and pomp. The colors, clear as they were some three thousand years ago, are interesting in combination—brown and light green, red and white, and a blue that rivals the deep hue of the Egyptian sky.

Though we know that rich cloths were used for tent hangings very few have been unearthed. Most of the fabrics which are available for study are costumes. Herodotus, the father of history, writing in Greece in the fifth century B.C., said, "The Egyptians wear a linen tunic fringed about their legs called 'calasure' over which they wear a white woollen garment, nothing of woollen taken into the temple or buried with them as their religion forbids it." As Greek traders had found the markets of Egypt as early as the seventh century B.C. it is easily explained how a Greek historian could be so familiar with Egyptian customs. The two countries exchanged goods and the Greeks enjoyed commercial privileges in Egypt which left a permanent stamp. In writing of weaving Herodotus gave details as to large vertical looms, but specified only men as the weavers. As women undoubtedly could weave quite as well as the men, it may have been a factory of some kind to which he referred.

One of the earliest attempts at the application of painted pattern is a fabric found near Thebes, and dated about 1594 B.C. It was neither a mummy cloth nor a costume, but must have been used for a wall or tent hanging as it was finished with loops at the top. Patterned in red and blue it was stiff and obviously not washable. The printed fabrics of subsequent centuries were more useful and undoubtedly more popular for they could be laundered. Mummy cloths made a good deal later were often decorated with borders of blue or tan. Some even bore texts copied from that fascinating ancient document, *The Book of the Dead*. Several remnants of different printed patterns made just before the Christian era are in existence.

Pliny, writing in Rome in the following century, described in detail the Egyptian method of printing with color. Whether the processes that he saw were the very latest developments or whether they had been pursuing these methods

for many years is open to conjecture. In any event his report is amusing as well as enlightening.

An extraordinary method of staining cloths is practised in Egypt. There they take white cloths and apply to them, not colors but certain drugs which have the power of absorbing or drinking in color, and in the cloths so operated on there is not the smallest appearance of any dye or tincture. These cloths are then put in a cauldron of some coloring matter, scalding hot, and after having remained a time are withdrawn all stained and painted in various colors. This is indeed a wonderful process seeing that there is in said cauldron only one kind of coloring material. And these stains or colors, moreover, are so firmly fixed as to be incapable of being removed by washing.

In another reference he considered this method as a kind of painting, the skill of the procedure forever intriguing his interest. He made no special reference to the methods of applying the pattern, but other writers have been more explicit on that point. Small blocks were used for printing, no matter whether the pattern was a simple all-over diaper or an elaborate figure. It must have been a tedious process for even so simple a thing as a rosette set within a diamond could not be printed with one operation. A wavy line cut from one block had to be printed four times to make the diamond. The leaf of the rosette also had to be repeated, and yet another block used for the blob in the center. The building up of a large design seems like the work of a life-time.

Outside influences crept into the pure Egyptian style from the seventh century B.C. on and the Persians who took over the country two hundred years later left a definite impression. A Hellenistic trend followed Alexander the Great, who conquered Egypt on his triumphal tour in 332 B.C., and at about the same time an Oriental flavor appeared in all designs. When the great Alexander died and his domains were divided Egypt fell to his general, Ptolmey. During his

rule and those of his successors Greek culture was fostered and Egypt once more became wealthy and powerful. When this line of kings was finally overthrown by the Romans the last of the Ptolmies, the famous Queen Cleopatra, was left under the guardianship of the Roman Senate, and on her death in 30 B.C. Egypt became a Roman province. The beginning of the Christian era saw that new religion introduced into Egypt and in the first century the Roman Emperor Hadrian founded the city of Antinoë which plays an important part in later textile history.

Certain definite motifs are always connected with early Egyptian design. The *lotus*, which spells Egypt to many people today, was the inspiration for the capitals of the massive columns which adorned their temples. It also appeared in the decorative bas-reliefs, as well as in the picturesque wall-paintings. This lily of the Nile was a great favorite with everyone including the children who gathered the real flowers in the streams and wove garlands from them. The lotus perfume was dominating even in the heavily scented air of Egypt. From it came other popular motifs—the *palmette*, a side view of a lotus bud highly conventionalized, and the *rosette* which is really the full-blown lily viewed from above.

Waves were frequently part of a banded design. Not only were they closely associated with the favorite lotus, but water flooding over the low Nile valley meant fruitfulness. The waves, therefore, were welcome symbols of prosperity. The zigzag symbol of the water itself is still used in the Zodiac sign for Aquarius, the Water-bearer. The *papyrus* plant came from the same fruitful river, and though now nearly extinct can be found in the upper reaches of the Nile valley. The entire plant which grows from three to ten feet in height was used by the ancient Egyptians. Small sheets of paper made from the pith were joined together to form the long scrolls needed for writing. The feathery bell-

shaped flower may have served as the inspiration for the Egyptian "bud" capitals instead of the ever popular lotus. Both the papyrus and the lotus were used for designs in the linen tapestries found in the tomb of Thotmes at Thebes.

The *sphinx*, a later form of ornament than the lotus, was not used so indiscriminately. Unlike the female winged sphinx of Greece the Egyptians depicted it as masculine and without wings. To them it was representative of the combination of strong physical and intellectual power. To us, even today, there is a sense of virility as well as mystery surrounding the famous stone sphinx which lies partly buried in the drifting sands of the desert just outside Cairo. Used in pairs, with human faces that were really royal portraits, they guarded the entrances to temples. Used on fabrics they were indicative of superior mentality.

The sacred beetle, the *scarabaeous* or winged globe, was allied by his diligence to the sun. It was used as an invocation of good luck, the globe representing the sun and the wings providence. The *phoenix*, the mythical Egyptian bird so frequently mentioned by writers as the symbol of the Resurrection, seldom appeared in textile designs. Though later Greek and Roman artists portrayed it as an eagle, the Egyptian bird resembled a heron with two long feathers growing from the top of its head, with the occasional addition of an extra tuft of feathers on its breast. Pliny, the Roman, maintained that there was only one at a time, and that as it was dying it built a nest and from the dead body came the new phoenix who carried the body of the father to Heliopolis and burned it there on the altar. The more general belief was that a new phoenix, more young and beautiful, arose from the ashes of the old one. To the Egyptians it symbolized the glory of the morning sun rising out of the burning glow of the dawn and, therefore, was the sacred bird of the sun-god Ra.

There was also the sacred serpent, *Uraeus*, and the two

asps representing dominion and monarchy. The *palm* appeared frequently as did other plant forms, wheat, daisies and marsh plants. The tree of life like the *hom* motif from Assyria symbolized all life growing from the soil and aspiring to Heaven. Trees of different types, indicative of minor divinities, were naïvely mixed with lions and sphinxes and the hawk-headed lion-bodied griffin. The animate forms most often used included the lion, the panther, the horse and zebra, the peacock, the duck and the ostrich alternating amusingly with palm leaves. One fragment shows two rampant animals, back to back, which is certainly proof of an interchange of ideas with Assyria.

There was no effort toward pictorial representation in any of these patterns, the flat tones and lack of perspective being a large part of their charm. When human figures were included they were without modeling and usually drawn in profile. Though new patterns were later evolved from the foreign influences, the symbols of the ancient Egyptians carried on for many centuries.

Antinoë, the city in central Egypt founded by the Roman emperor Hadrian about 122 A.D., was one of his greatest creations. It was brought to light and to public notice in 1896 when a wealth of beautiful textiles was discovered there. Some of the linen garments found in the tombs were decorated with colorful silk borders. Though no other silks were found the same patterns were discovered on wool garments from other localities. These patterns appear more like the classical Greek designs of the fifth century B.C., though Egyptian and Persian characteristics are evident as well. Squares, circles with stars in them, crosses, crescents, palmettes, four-leaf rosettes, the hooked cross (swastika) and various plant forms including clover were scattered symmetrically over the whole garment. The best-preserved of these rare first century textiles are at Aix-la-Chapelle and Sens in France.

Panopolis, another important weaving city, was noted for its fine linen. *Alexandria*, famed for her silks, became the chief cultural center of the then known world after the decline of Athens. The Alexandrine Greeks maintained their position despite the entrance of Roman culture and were only forced into obscurity after the conquest of Egypt by the Mohammedans.

The story of early Egyptian weaving necessarily ends with the introduction of Christianity. Another chapter gives us her later history under the famous Copts, whose textiles were quite as distinctive as those of their fore-runners. We can but give thanks to the burial customs of these ancient people, for without their sealed tombs, their belief in the necessity of taking material things into the next world, we could not have such accurate knowledge of the glories of early Egypt. Those who bring to light this ancient life appear to some people to be vandals, but the expert scientists and artists who are working there are really building up appreciation for the art of our oldest civilization.

CHAPTER II

The Little Known Fabrics of Other Early Civilizations

1

THE TEXTILES OF ASSYRIA AND BABYLONIA

PRACTICALLY all great centers of civilization have developed along some fertile river valley. Where grain and cereals grew easily there the people settled and after they had cared for the necessities of life they were glad to turn their energies to other pursuits. The valley of the Nile limited and at the same time fostered the evolution of the early Egyptians. In Asia Minor there lived on the fertile soil of the valley of the Euphrates and Tigris rivers other ancient peoples quite as old as those in Egypt. The two great empires of Babylonia and Assyria struggled and fought with each other and war eventually destroyed them. They are as difficult to separate historically as geographically for the superior strength of one meant the weakness of the other until the situation was reversed. Babylonia was undoubtedly the older country as the earliest records of its existence carry us back to 3800 B.C. It was essentially a land for those who could till the soil and appreciate the value of a permanent and beautiful home. Assyria, on the other hand, farther up the Tigris river was a nation of hunters, the whole empire resembling a soldiers' camp fully prepared against invasion.

Though each fostered its own type of art no capital in the world had been the center of so much power, wealth and culture as Babylon in its heyday. This ancient city on the Euphrates is too often remembered only as a synonym for luxury and vice. Nebuchadnezzar, the most famous of the Babylonian kings, built a palace there during his reign (604-561 B.C.) which was one of the wonders of the ancient world. Unfortunately the rare and costly fabrics with which he decorated it have been entirely destroyed. Invaders lowered the proud Babylonian heads and in the fire and general destruction all traces of these beautiful products of the loom were lost.

Nineveh, the capital of Assyria, was farther inland up the Tigris river. The name of Queen Semiramis, the successor of Ninus who built the city, has called forth many an adventurous tale. According to legend it was she who introduced the art of weaving, for which full praise should be accorded her. Though many of the stories regarding this princess are untrue, there is an aura of romance about her which has never been dissipated. At her death she was turned into a dove and worshipped thereafter as a deity.

Recent explorations have provided evidence that these war-loving people were fully appreciative of all the arts, for pottery and glass similar to those of contemporary Egypt have been brought to light. Colorful bas-reliefs in marble, frescoes and enameled tiles, and pictures in alabaster from the gorgeous palace at Nineveh recreate for us the picturesque ceremonies of court life. These ancient rulers professed their momentary superiority by the richness of their palaces, even as they did in later days. Though the walls were made of mud they were hung with splendid cloths which must have provided a colorful and gorgeous background for the court. Even the houses of the rich merchants were built to vie with those of royalty and filled with furniture not unrelated in style to that of the Egyptians. To

complete the picture of extravagance they wore elaborately patterned costumes heavy with gold and embroidery and even their horses had trappings embroidered in gold. With the ambition of each one to eclipse the magnificence of the others everything was covered with a profusion of ornament.

The kings, as patrons of all the arts, were especially interested in the designs and textures produced by the craftsmen of the loom. The art of weaving reached a high degree of perfection under their direction, a perfection that has been equalled but never lost. The great weaving centers that were established by those early Assyrians and Babylonians have maintained their positions and traditions down to our day. In the famed Chaldean city of Ur have been found the clay tablets which served as account books for the weavers working in 2200 B.C.

The Babylonian fabrics achieved such great fame during the days of the Roman Empire that even the Latin poets sang songs in praise of the *Babylonica stromata*, a kind of tapestry which included figures of animals. They were exceedingly valuable and were priced according to their weight in gold. Metellus Scipio is reported to have paid 800,000 cisterces for a *trichinaria babylonica*, and Nero even more than that for some of the same stuff.

Textiles were an important trade item even then. Rich and powerful princes from neighboring countries strove to equal the glories of the courts of Babylon and Nineveh. Not having such skillful weavers of their own, they eagerly sought out the merchants from the rich capitals and bargained with them. It is most unfortunate for us who would like to study those rare old things that those two warring nations were so bent on their own destruction. Very few examples are extant, for whereas the Egyptian method of burial preserved many records for us, cremation in Assyria and Babylonia destroyed them.

The finest wool was plucked from their carefully tended



PLATE 3. A Minoan statuette from the Palace of Cnossus. This snake-goddess belonging to a royal temple is dated *circa* 1600 B.C.

Courtesy British Museum, London.



PLATE 4. A fifth century B.C. Greek vase in terra-cotta red on black shows some of the gods and goddesses at Eleusis. The amusing motifs in the gaily patterned costumes are suggestive of contemporary designs.

Courtesy British Museum, London.

flocks, and goat's hair, too, was highly esteemed for clothing. A famous kind of cotton grew in this fertile valley and linen was always plentiful. Silk was imported from the East and the versatile weavers even created a new variety of gold stuff which was the pride of their kings. Fine cloths of cotton and flax and silk were woven on the simplest looms and colorful embroidery added the necessary ornamentation. Intricate patterns were also produced by a kind of tapestry weave. Though these fabrics were contemporary with those of early Egypt they were more sumptuously decorated, for simple and unadorned textiles were never the mode. The Assyrians can be credited with making textile weaving into an art.

Their trend in design was toward exactness and the proper filling of spaces. *Ashurr*, the winged disc of the Assyrians, was a conventional motif significant of eternity, wisdom and omnipresence. The *hom*, or tree of life, the most famous of Assyrian motifs, has lasted down through the ages in various guises. Originally there were two trees, one of life, one of truth, and wild beasts were symmetrically stationed on either side to keep away evil spirits. This ultimately merged into one tree, very often only a trunk with a faint tracery of foliage at the top, and the wild beasts became tame ones. But the symmetrical treatment was retained with the trunk of the tree as the dividing line and the motifs on each side exactly alike. In one early design of this character two *cheetahs* or rampant leopards guarded the tree. They were placed back to back, but with their necks so twisted around that they could face and glare at each other.

Most of the war-like patterns including animals of savage character were designed in Assyria where the tiger or lion springing on the back of a defenseless gazelle was a favorite motif. There may have been deeper significance than we know in that suggestion of how powerful Assyria could spring upon her lesser foes. Those warriors were also great

hunters and various animals of the hunt were incorporated in their somewhat complex patterns. War chariots, implements of war, men in warring rig were frequently mixed in with the familiar lotus and a great variety of other flowers including the pomegranate. Despite the fact that their colors were very limited the fabrics were always full of vigorous imagination.

The textile workers of what is now Palestine and Syria must be included in reviewing the fabrics of those early countries lying to the east of the Mediterranean. When Jerusalem was conquered by Nebuchadnezzar in 586 B.C. he carried the captive Jews back to Babylon. There they learned to make the most elaborate textiles, and when they were finally returned to their native land they did not forget their hard-earned knowledge. There are very few motifs that can be identified as definitely Jewish, for they were similar to those of contemporary Egypt and Babylon. The almond, the palm tree, the lily and the pomegranate which we find mentioned in the Scriptures each had their place in these designs.

There are not very many Biblical references to weaving, though an *ephod* (a priestly garment) was "of woven work, all of blue." Remembering that these quotations are taken from the King James version of the Bible which was translated early in the seventeenth century may explain the following:

She maketh herself coverings of tapestry; her clothing is silk and purple.

The word tapestry is not of Biblical origin. One of the most explanatory and picturesque statements comes from Exodus:

And he made the ephod of gold, blue and purple, and scarlet, and fine twined linen. And they did beat the gold into thin plates and cut it into wires to work it in the blue, and in the purple, and in the scarlet, and in the fine linen, with cunning work. And

they made upon the hems of the robe pomegranates of blue and purple, and scarlet and fine twined linen. And they made bells of pure gold, and put the bells between the pomegranates upon the hem of the robe, round about between the pomegranates.

And then just to finish it there was "a girdle of fine twined linen, and blue, and purple, and scarlet, of needlework."

Repeated statements indicate that the wealthy people preferred to wear white, and had numerous changes, but that the ceremonial robes were usually of purple. That does not mean just the one color that we know today, but the many tones ranging from that toward crimson. The ancient Hebrews of Jerusalem had an exclusive right to use certain kinds of dye, and when ten curtains were prescribed for the Tabernacle of Israel they were to be of "fine twined linen, and blue, and purple, and scarlet."

The Phoenicians, that nomadic race who are supposed to have done so much for the dissemination of culture, had a kind of monopoly on this purple and scarlet dye. Probably it had been discovered in Babylon, then used exclusively by the Jews until finally the Phoenicians got hold of it in order to act as merchants for it. It was quite a bit later that they set up their own manufactory for this gorgeous color in their ancient city of Tyre. They made it from a small shell-fish, even as they do today, and Tyrian purple soon became synonymous with that rich hue which has always been the favorite emblem of royalty.

2

CRETE, THE SUCCESSOR TO EGYPT

Crete, that small island that was in the very center of the early Mediterranean world, was the real artistic successor to Egypt. No doubt this geographical situation had a great

deal to do with the progressiveness and the unusual advancement of its civilization at such an early date. The merchants from the Far East brought their treasures to the Syrian coast, and Phoenician or Cretan ships carried them to all the Aegean islands. The people from Greece and farther north came to Crete as to a trading center. The riches of Egypt and Assyria and Babylonia were all available.

Probably much of the fame that has been given to the early Phoenicians really belonged to Crete. It was a seafaring nation from king to merchant-traders. Their ships sailed all the seas and credit is now given them for clearing the Aegean of pirates. Though there are records that seem to indicate a civilization almost as old as that of the Egyptians, the great era was from about 2500 to 1400 B.C.

Minos, the famous king who gave his name to these progressive people, was reputed to be the son of Zeus. It was he who built the remarkable palace at Cnossos which is today providing us with most of our working knowledge of the Minoan people. This palace must have been one of the greatest wonders of that age for not only was it beautiful in its magnificence but it included so many things which we consider modern. There was even a very workable type of plumbing. In one room, which was perhaps the great assembly hall, there was a gypsum throne which has definite Gothic characteristics. If you remember the old story of the Minotaur you may also recall that it was right next to this famous palace that the intricate labyrinth was built which led to his lair.

Brilliantly colored bas-reliefs, pictorial representations on pottery, little statuettes from the temples, finely modeled bits of jewelry and metal plaques all help to complete the story that is gradually being built up of how the Cretans lived and worked, and what kind of costumes they wore. The young girls, pictured in the remarkable wall-paintings, are not unrelated to those of our modern days. The style of

coiffure included little curls plastered down on brightly rouged cheeks. Small waists that are fairly Victorian must have been a striking contrast to the loosely draped costumes of Egypt or Greece. The long skirts were finished with flounces and a bustle-like effect in the back was secured by a bunching up of ribbons. One amusing little statuette found in the palace of Cnossos wears a long skirt made up of tier after tier of ruffles. There are also vigorous bull-fighters on some of the wall-decorations who might well be the fore-runners of the glorious Greek athletes. They wear elaborately decorated loin cloths finished with fringe.

It is possible that all their rich textiles were brought from the East, but the designs are so definitely Minoan that we prefer to credit them to Crete. The influence of the sea is paramount for the favorite motifs were shells, flying fish, octopi, seaweed and waves. Later came flower forms and rosettes and palmettes. The fabrics may have been silk with the pattern either woven in or embroidered. Cotton and wool and linen were also used though they are difficult to differentiate when seen only in flat wall-paintings or carved stone figures.

The scientists who are busily engaged in unearthing all these treasures have found small art objects that are comparable to those of the Renaissance. But they have not yet * solved the riddle of the two kinds of writing which have been discovered on marble slabs in the ruined palace of Cnossos. It is indicated, however, that the art of letters was more highly developed by the Minoans than by the Egyptians or Babylonians. Perhaps when all those stories written indelibly in stone have been unraveled we shall know whether or not those people of Crete had their own looms and wove the rich textiles for their elaborate costumes. In the decadent days came the influence of the early Greeks who finally destroyed Cnossos completely about 1000 B.C.

* Fall of 1937.

It is only in this twentieth century that the glories and charm of this very up-to-date though ancient kingdom have been discovered.

3

THE FABRICS OF GREECE

If Crete was the artistic successor to Egypt, Greece attained the honor of being the home of the highest development of ancient art and culture. Though allusions to Greece were recorded as early as 1500 B.C. it was only after the downfall of Crete that she began to develop her own arts and industries. The fifth century before Christ, the Golden Age of Pericles, stands out as a supreme achievement.

Our knowledge of Greek life and customs comes from many sources, but that gained from literature is more familiar to most of us. Homer, writing in the ninth century B.C. of the wanderings of Ulysses, was the earliest recorder to provide us with information regarding textiles. He described Ulysses' dress as being decorated with elaborate weaving or embroidery. That these garments may have come from Eastern sources is the suggestion of later writers. In the same book, the *Odyssey*, there is the famous story of Penelope and her loom. You will remember that though many years had passed she was firm in her belief that her wandering husband, Ulysses, would return to her. But her suitors were obdurate and she finally silenced them by asking that they wait until she had finished what was on her loom. So each day she wove and they sat and watched her flying fingers. And each night she unravelled out what she had done so that the end was never any nearer. Of course such perseverance and devotion were well-rewarded. Penelope came to be regarded as the patroness of weaving, though the great Athena herself was the chosen goddess of the distaff.

Ovid tells a tale in his *Metamorphoses* of a beautiful Greek maiden named Arachne. She was the surest and best of weavers in all the land and so dared to compete with the goddess of weaving. This goddess was jealous of prerogatives, as were most of the Greek divinities, and in a moment of wrath turned the lovely maiden into a spider doomed to spin forever. Perhaps that is why even today no one can spin a web so fine as that made by the lowly spider.

Aristotle, who was a contemporary of Alexander the Great, often mentioned silk and silken robes. As silk was first brought into Greece from Persia about 325 B.C., it is probable that he gleaned his information from the soldiers who followed the great Macedonian. It is also possible that those early historians were not familiar with the look and feel of silk and confused it with fine cotton and linen. It was some centuries later after direct trade was opened up with the East before there was a steady flow of silk out of China into Europe.

Interesting though these literary reports are, there is another source of information which is just as fascinating. One of the greatest eras in the history of art lasted from the fifth to the third century before Christ. The Greeks were fine architects, they erected magnificent buildings and decorated them lavishly. From these decorations we can reconstruct fairly complete stories of their daily lives, their sports, their fêtes, their costumes, their religious rites. The great Parthenon, which crowns the Acropolis that was the artistic center of Athens, was adorned with a carefully designed frieze which progressed around four sides of the temple. The figures carved in low relief were afterwards painted with what must have been bright color tones. As in Egypt strong clear color was essential to vie with the brilliance of the landscape. For many years we envisioned the charming Grecian maidens as floating up and down the hills of Athens in flowing white robes. Nothing could have been farther

from the truth. A group of young men and women in action or in repose must have presented a colorful sight for all of their costumes were gay and vivid.

From this same frieze and from others on smaller temples of the same era we can gain a rather definite idea of the style of dress which was then in vogue. The cleverly draped robes of the lovely ladies of the Parthenon added greatly to their charm. Wall paintings also provided a few details, but one source that is a never-ending delight is the large collection of Greek vases. Though they were made in but two colors, a natural terra-cotta and black, the precise line drawings are so clear that the brilliant colors can almost be visualized. On these vases are stories of every phase of Greek life through the changing centuries. We can see the pure classicism come and go, and we can see the rise of the decadent art of the Christian era.

The earliest Greek style was, of course, inspired by the Minoan, the small patterns even reflecting the foam and fish motifs of Crete. An unimportant era followed from which developed the Ionian Age when sphinxes and lions and winged figures seemed to be the favorite forms of decoration. Just preceding the fifth century B.C. the designs were for the first time of pure Greek origin when the meander of ivy or laurel decorated the lower edges of the flowing tunics. The symbolic forms which had meant so much to the Egyptians were replaced by motifs that had only an esthetic appeal. It has been said that the one weakness in this great art lay in the fact that back of it there was no symbolism. The art of Greece at its height eclipses all other art for sheer beauty, but it is the beauty of simplicity, calm restraint and perfection of line and proportion. Supreme artistic skill combined with estheticism produced a style of ornament that is still used and always will be by those who appreciate its severe beauty.

The carefully draped robes of the classical era were so

full that they had no need of ornamentation except possibly a simple band on the lower edge. Later when all-over patterns came into vogue for costumes they, too, were finished on the bottom with decorative banding. These fifth to fourth century B.C. patterns included dots, stars, little crosses, small circles, lines and squares that formed trellises. The borders required more definite motifs—lozenges, squares enclosing rosettes, and the famous Greek key or fret-work. The influence of the plant forms was ever present, ivy, pomegranate, oak, lotus, and above all the beautiful *acanthus*. This flower, by the way, was the cultivated plant and quite unlike the wild prickly one which later served the Gothic architects and sculptors as an inspiration. To the Greeks the smooth curving leaves of the honey-suckle and the *acanthus* were an essential element in their rendering of beautiful line. The *anthemion*, sometimes called the honey-suckle, which became a purely conventional design was developed from the radiating petals of a lotus flower. From the early Assyrian designs were derived patterns with animals and figures engaged in active combat. Chariots with horses, dolphins, birds, winged horses, and fighting warriors were all of Eastern and not Grecian origin.

Any fabrics with elaborately woven patterns were undoubtedly imported from Persia with whom they did a tremendous business. Though an upright loom was a familiar sight in every Greek household, the weavers were trained only in the making of simple cloths. Apple green and sea-green, purple, dark and light violet, white and a fiery red seem to have been the favorite hues. Saffron, purple and a light purply-blue were indicated for under garments.

Recent discoveries from graves on the Crimean peninsula have brought to light many objects from the fifth to the first century B.C. One piece of fine linen shows traces of color which was painted or printed. Wool stuffs, too, were decorated and one has a tapestry woven border with a fret de-

sign, another a wave scroll. Some have vines and ivy, as well as acanthus, and occasionally there are small fragments of rows of tapestry-woven ducks and stag heads. For the most part the motifs were similar to those on contemporary Greek vases. Some larger cloths made of small pieces sewn together depicted scenes from the stories of Hercules and Oedipus. The material was usually brown or red with the pattern in black.

Though this era of art history stands alone and untouched it is not the greatest in the history of textile design. The Greeks left unequalled records of achievements but only a few concrete examples of the weaver's art. It is to later centuries that we turn for perfection in beauty of design and texture.

4

ROMAN TEXTILES

Rome was the logical successor to the glories that were Greece, but the Romans were more interested in civic affairs than in artistic triumphs. Rome had fewer ideals than Greece and a greater love of luxury. One writer has said that "to get a true conception of Roman art, take pure Greek art, rob it of genius, treat it materially and realistically." The Greeks appreciated splendor, but the Romans loved extravagant magnificence.

The fantastic history of the rise of the Roman Empire is familiar to everyone, and its widespread influence will be noted in later chapters. We have learned a great deal about these world conquerors from their literature, their pictorial decorations, and the records of their military achievements on triumphal columns and arches. Recent excavations in Rome and in Pompeii have brought to light even stronger proof of the greatness of the builders of the im-

perial city. Though Pompeii was not considered an important city at the time of its destruction, enthusiasm centered around its excavation. Nevertheless, its gorgeous decorations executed in a mediocre manner are really quite secondary to the evidences of superior engineering skill. Very few specimens have been found to indicate any interest in the minor arts and crafts. The artists worked easily and almost carelessly with no definite ideas to motivate them.

The Romans did very little weaving for they were not adept at such homely tasks. Nor did they make many printed fabrics like those of the Egyptians for they did not understand the art of dyeing. The few that they did make were usually the inferior products of household slaves. Strategically situated all merchant ships from Tyre or other Eastern ports stopped there with merchandise to tempt the wealthy citizens of Rome. Pliny told long tales of the Chinese and how all classes wore silk, tales he had picked up from the sea-faring merchants who carried the Oriental silks across the seas. These fabrics pleased the Romans particularly and they were the greatest consumers of silk outside of China. They loved ostentatious display and magnificent gold-embroidered robes were considered to be the only suitable costumes for the head of the great Roman state. Regal fabrics of solid gold were brought from Asia and later from Cyprus. Consuls returning to Rome after a victorious campaign had fêtes and parades, their heads crowned with garlands of laurel and costly robes embroidered in gold flung back over their shoulders.

The Romans had at first copied the Greeks as to style of dress and materials, but such simplicity and lack of adornment did not please them for long. They soon laid aside the wool garments which had served rich and poor alike and every person who could afford it was dressed in silk. Just before the Christian era, due to the extravagant tastes of the people, there was a ban against the importation of colored

fabrics from the East. But either the ban was rescinded or openly disobeyed for Pliny, the historian, deplored the fact that silk, formerly worn only by ladies of great wealth, was then in general use. Caligula, the mad emperor, was reprimanded for having dressed himself all in silks like a woman, and Nero was said never to have worn the same robe twice. Tacitus recorded an edict of the Roman Senate in the year 16 A.D. prohibiting the wearing of silken robes by men in Rome. The Emperor Heliogabulus, who came from Syria, was reckoned the first to wear garments of pure silk, for previously it had been mixed with other threads.

The Augustan poets made frequent reference to these extravagances of costume and it was only the growing power of the Christians who looked down upon such practices as ungodly that lessened their use. Silk then became so expensive that the Emperor Aurelian refused to allow his empress to wear a certain silken gown for it was worth its weight in gold. When the Goths invaded Italy in 409 part of the ransom they demanded for protection of the Holy City included four thousand silken tunics.

These pleasure-loving Romans added little to the designs then known. Even in Pompeii, which many consider an example of the purest Roman style, there are two definite types of ornamentation, one Greek and one Roman. The Roman scroll and acanthus have fuller curves than those of the Greeks, for the Romans responded more readily to the circle than to the flowing elliptical lines of fifth century Greece. The rounded shell was first used on the Arch of Titus. The interlacing circles of the guilloche provided the favorite Roman banding. One design that was most characteristic of Roman power was the *fascēs* (the lictor's rod which has become the symbol of modern militarism in Italy today). It was represented as a bundle of elm or birch rods bound around an ax, the head of which protruded. Garlands of laurel suggested their conquering attitude as well as their

preference for circular motifs. The *quadriga*, a Roman chariot with four galloping horses, later became a favorite pattern with the Byzantines.

After the introduction of the Christian religion a different type of design slowly evolved. This early Christian art which seems closely related to that of Byzantium was conceived in the Catacombs of Rome. There the symbolic figure-painting with which the religious refugees covered the walls was more than an artistic endeavor. It was the written expression of their new faith. As the Christ could not be portrayed in His true form lest the Roman persecutors destroy it, the early Christians developed an amazing array of symbols. A fish, pelican or eagle might represent Christ, while a circle indicated eternity, a dove the Divine Spirit, the olive branch Peace, and the wreath triumph over Death. All of these symbols and many others were also worked into the bits of applied embroidery with which plain garments were decorated. The Greek and Latin crosses were frequently employed, the former representative of the Trinity and the latter of the Crucifixion.

Coptic patterns as well as the Coptic style of dress were adopted in the third century. The elaborate decorative emblems applied to the straight tunics included figures not unlike the simple but crude forms of Coptic design. The tunics, however, were rendered in silk and embroideries instead of in linen with wool tapestry interwoven. In this Graeco-Roman era figures and animals in action were the most popular motifs, though dolphins, roses and a few other flowers were all employed. These designs and the straight tunics they decorated were later replaced by simple meander patterns around the hem of a more flowing garment.

Early in the fourth century the Emperor Constantine moved the capital to Byzantium, which meant the introduction of a new type of textile with different motifs. Nevertheless the collection of beautiful silken stuffs in Rome con-

tinued to grow and after the Emperor Justinian had been successful in learning how silk was made, many special looms were set up in the imperial palace in Rome. But the vast quantity of rich silks listed in the Papal Inventories of the sixth century were probably not all made there, for undoubtedly many had been sent from Byzantium. Roman art and culture declined in the sixth century and with it Roman patterns in textiles, so we must turn to Byzantium where the Roman emperors continued to be the dominant force.

CHAPTER III

The Story of Silk

ALMOST three thousand years before the Christian era China was a vast empire with rich and powerful rulers. They had broad domains, strange ways of living and strange customs according to the stories related by foreign travelers. Not that there were tourists in those days but happily for us the venturesome spirit who decided to see the world beyond his immediate sphere was usually one who made note of what he saw. Handed down through centuries these tales have come to us by word of mouth, by picture and by writing.

One of the most prized stories has to do with the lovely empress Si-ling-chi, who was the wife of the great prince, Huang-ti. While wandering in her garden, or possibly while meditating on a garden bench, she spied the feverish activity of a small worm wrapping himself in a dainty cocoon. Her interest increased as she found others working equally hard and she watched them day after day. Finally, as a bold stroke, she took one of the little cocoons in her hands and discovered that with infinite care she could unravel it just as it had been wound. After completing this painstaking task she had a fine thread of great length. From that time on she nurtured the worms carefully and finally she was able to spin a thread which could be woven.

Such is the simple beginning of what is now and has been since that time one of China's greatest industries. Is it any wonder that the Chinese venerated the little princess and made her goddess of silk? The exact date of her discovery is

difficult to establish but our most learned writers place it anywhere from 2698 to 2640 B.C. It can be proven definitely that Huang-ti was ruling during the latter half of that century, and as it all happened so long ago that approximate date is sufficient. Though silk may have been actually discovered at this very early date there are no translatable references to it prior to the twelfth century B.C.

The Chinese also credit Si-ling-chi with the making of the first loom, though it is probable that some sort of hand weaving had been practised even before her day, for undoubtedly the people of the court had costumes of something more elaborate than animal skins. We do know that simple looms were in use as early as 2500 B.C. Realizing the value of their discovery the Chinese guarded the secret of the silk jealously—so jealously that it was some two thousand years before definite knowledge of it was carried out of the country. And then it travelled across the Yellow Sea to the islands of the industrious Japanese. For a long time their merchants had been buying the raw silk from China and they fully realized that they could make tremendous strides if they but knew the secret of its creation. In the third century four Chinese maidens who were experts at sericulture (the growing and care of the silkworms) were mysteriously stolen away and carried through Korea to Japan. There they instructed first the people of the court and later the craftsmen. As these girls knew not only sericulture but also how to weave silk into materials both plain and patterned the Japanese were soon able to set about the business of producing silk quickly and scientifically.

At about the same time a Chinese princess carried to Khotan some of the eggs from which the worms grow, and also some of the seed of the white mulberry tree on which they feed. As it was quite outside the law to export either of these things she secreted them in her head-dress. One might well make up a romantic tale of the princess who escaped detec-

tion by her royal status while a poorer or lesser person would have been carefully searched before being allowed to cross whatever indefinite border there may have been at that time. There in Khotan, as well as in some of the other near-by states, they had a kind of raw silk which they spun in a crude way from the cocoons of native silkworms. As they did not know the processes of reeling it, the silk was rough and uneven and yellow in color, in no way comparable to the precious fibre from China. So when they acquired these rare silkworms they guarded their secret carefully, too, for each one who learned it thought best to keep it from spreading any further.

Aristotle, the great philosopher, in his *History of Animals* written in the fourth century before Christ described the silkworm as "the worm which has horns," and also related a tale of the fineness of the thread which the women unrolled from the cocoon and afterwards wove. He stated, and others verify his words, that the first silk weaving to be done in European countries was on the island of Cos. Pamphile, daughter of Plates the ruler of this small island lying in the Aegean Sea near Asia Minor, is credited with weaving the famous "gauze of Cos." Though that silk may have been made from native silkworms it is more than likely that the silk she wove had already been spun in China and made into fabric there. When the merchants arrived in Cos with the wondrous Oriental silks it may have been curiosity which prompted her to unravel a piece of the fabric, or it may have been that the texture or the pattern was not to her liking. At any rate it is assumed that the silk which was first brought to the island was just as it had been woven by the Chinese. Under her skillful fingers its quality and character were entirely changed and for the first time there was presented to the other European countries grouped around the Mediterranean a sheer and beautiful fabric of native manufacture. Other people in the following centuries copied or developed

this idea of Pamphile's and many silks were woven in the Near East which had left China as quite different fabrics. Just think how anxious they must have been to use the silk and how difficult it was to obtain that they would resort to such extremes.

Pliny, writing his comments some centuries later, described the reeling of Coän silk, which may have referred to native yarn, or to the Chinese thread after it had been unravelled and was ready for reweaving. The general term of Coän silk apparently meant any thin material, not necessarily silk, which was suitable for the filmy costumes worn by the beautiful courtezans of Greece and Rome. Even the famous veils of Salome are supposed to have been made of this gauze of Cos. It was so delicately sheer that it revealed rather than clothed the figure. Cleopatra wore all silken garments of "the fabric of Sidon, which wrought in close texture by the skill of the Chinese, the needle of the workmen of the Nile has separated, and has loosened the warp by stretching out the web." That certainly indicates a reweaving or remaking of the heavy and closely woven Chinese silks, similar to that practised on the island of Cos.

We are quite sure that knowledge of silk and some ideas as to its culture were brought into Europe by Alexander the Great (356-323 B.C.) after his conquest of India. He had there discovered the native silks which were being produced after Chinese methods, though he considered them inferior in quality. It is known that he carried back with him many examples of the fine silk weaving which he found along his triumphal path.

But the old idea still prevailed for Vergil, writing in Latin in the first century, described silk as carded from leaves. In fact most of the Greeks and Romans believed it to be a woolly substance or fleece spun from the leaves of trees or possibly from the bark. Even at that time the Chinese told enquiring visitors that silk came from a special

kind of sheep when water was sprinkled on them at certain seasons of the year. The sunshine was then supposed to work a miracle and what might have turned out to be merely wool on an ordinary sheep became silk on this carefully sequestered flock. Pliny, in the first century B.C. made note that "The Seres (Chinese) are famous for the wool that is found in their forests, and after steeping it in water they comb off a white down that adheres to the leaves." No doubt there were other stories just as ingenious and the wanderer from foreign lands departed even less wise than when he came.

Though all the countries around the Mediterranean were familiar with these fabrics of silk it was only the wealthy princes and emperors who made use of them. Julius Caesar is credited with a lavish display of Chinese silks at some of his regal entertainments and their use by other Roman emperors was noted in the preceding chapter. Trade routes had long been opened up from east to west but it was not until the second century that a protected caravan route was established between Persia and China. Prior to that the caravans had made the hazardous trip as best they could, though many a time they were overcome by bandits. There were also the long sea-routes by which the Chinese silks could be brought to the Near East and then traded to the Mediterranean merchants. Long before the days of the Roman Empire the Medes and Persians were known as purveyors of silk, for in Greece all silken clothes were referred to as "Median garments." There are stories, too, of Roman traders who ventured so far afield that they discovered beautiful silks at the mouth of the Indus and Ganges. As has always been true the most prosperous communities were those near the great rivers.

Most writers agree that by the first century of our era silk weaving was established in Asia Minor, Egypt and Greece, and Flemming states that it was known in the vicinity of Byzantium before the coming of Christ. Silks which

are definitely ascribed to this century had *semé* patterns, squares, grouped lozenges and rectangles and circles filled with stars. One of the earliest pieces of silk wrought in China of which anything definite is known was made during the Han dynasty which dates from 206 B.C. to 220 A.D. This particular piece has an interesting blending of Chinese and Hellenistic motifs indicating how styles of one nation interacted on the other.

In the third century the monk, Dionysus Perigates, wrote the following of the Chinese: "The Seres make precious figured garments resembling in color the flowers of the field, and rivalling in fineness the work of spiders." China had kept her supremacy in the silk world and despite the fact that knowledge of sericulture had spread beyond her borders she held her place alone until the sixth century after Christ. Then Justinian, the Roman emperor (527-565) who was ruling in Byzantium, started his investigations which led ultimately to a really wide-spread knowledge of silk culture.

The story goes that he had long been eager to know more about the silk thread of which his gorgeous costumes were made, and his enthusiasm was further aroused by two Nestorian monks who came to his court in Constantinople after a long stay in China. Though they told him all they knew of the handling of silkworms it was not enough. The emperor realized that if he but knew the secret of those worms he and his court and his church could all have even more beautiful silken robes than the ones they had then. His court could be really more magnificent than any other court in the world! So back to China he sent those two monks with a royal command to learn the industry thoroughly. Years passed and finally they returned as ragged and unkempt pilgrims leaning heavily on their staffs. Those bamboo staffs were most precious, for in them were hidden the delicate eggs of the silkworm and the seeds of the white mulberry tree.

So sericulture was established in Byzantium, but that it

was not so successful as Justinian hoped is evidenced by the fact that for many centuries thereafter the rich princes continued to buy their silks from the merchants of Damascus or the coastal towns of Syria. Commerce in silk was still in the hands of the Persians and others of the Near East because of their central geographical situation. But their merchants must have traveled far afield for Matthew of Paris, the old chronicler, recorded the fact that in the eighth century Syrian traders set themselves up in Paris to dispose of their silks.

The knowledge of sericulture followed around the Mediterranean shores just as the development of textiles and patterns did. From Byzantium and Syria it was just a step to Alexandria, and on it went from there to Spain, to Sicily and finally to Italy. Syria, handling the lovely old Persian patterns, as well as those made by her own weavers, developed into a great exporting center. Alexandrine silks were famous the world over and from Sicily came the lively patterns of Saracenic inspiration. When the weavers fled from Sicily during political upheavals, they for the most part migrated north. Italy, building her fame on the patterns borrowed from Palermo and also from the Levant, kept her place for several centuries as the greatest of silk centers.

By the twelfth century the Italians were quite as successful as China in the arts of growing and weaving silk, and what is more they guarded the secrets of their success almost as carefully. In the fifteenth century the knowledge had spread to France where royal favors were granted to those who were most diligent in their raising of productive silkworms. Louis XI introduced the art into Tours in 1480 after he had acquired it in Italy, but his craftsmen were evidently not too fortunate. Francis I made the next attempt and, having taken possession of Milan, he transported some of the Italian growers of silk as well as the weavers to Lyons in 1520, and it is from that day that Lyons began to climb the ladder to fame. The highest perfection in the spinning of silk and in

the textiles created from it was reached during the seventeenth and eighteenth centuries in France. The gorgeous silks from the looms of Lyons hold a unique place.

Marco Polo, the Venetian who recounted so thoroughly and picturesquely his travels from Venice to the court of Kublai Khan and back again during the late thirteenth century, gave many sidelights on the manufacture of silk and its uses in the East. When finally he returned to Venice after many years of adventuring he became immediately embroiled in the wars with the Genoese. As the result of a losing battle he was one of many who were confined in prison for almost a year. There he became acquainted with a man who was more than willing to transcribe the adventurous tales as Marco Polo dictated them. For many years he was accredited with being one of the world's greatest romancers, but recently even the more erudite scholars have given him credence and have incorporated his statements in their treatises on thirteenth century Oriental life. The route he followed has been carefully checked, and all evidences point to the authenticity of his statements with regard to the lives and customs of the people, as well as to the location of their cities.

Throughout the Near East he saw gorgeous silks and he visited in "Bagdad where there is a manufacture of silks wrought with gold, and also of damasks, as well as of velvets ornamented with the figures of birds and beasts." In Kirman he found it worthy of note that "the women and young persons work with the needle in embroideries of silk and gold, in a variety of colors and patterns, representing birds and beasts with other ornamental devices. These are designed for the curtains, coverlets and cushions of the sleeping places of the rich, and the work is executed with so much taste and skill as to be an object of admiration."

In Cathay (China) he discovered that "The quantity of merchandise sold exceeds also the traffic of any other place,

for no fewer than a thousand carriages and pack horses loaded with raw silk make their daily entry; and gold tissues and silks of various kinds are manufactured to an immense extent." Throughout his travels he was always careful to make note of the commercial enterprises of the towns he visited, most of them having to do with the manufacture of silk. He brought back with him priceless garments, though on his return he and his companions chose to present themselves as ragged beggars come home because they had not been successful in their travels. He tells a romantic tale well worth reading for a vivid picture of medieval life.

Silken robes were worn by all the higher classes in England as early as the middle of the thirteenth century according to historical authorities, but Queen Elizabeth and her court are the first ones to be credited with wearing silk stockings in England. Some silk was made under Henry VI, but it was not until the Revocation of the Edict of Nantes drove most of the Protestant weavers out of France in 1685 that England set herself up as a center for manufacture. Then the industry became so important that a law was made forbidding the importation of all wrought silks from China, Persia or India.

The production of silk in America is a fairly recent development and our prowess in weaving is more notable in this century than ever before. Though we manufacture more silk than any other country we do not grow any. Our first silk mill was set up in Connecticut in 1810 and from that time on the number and quality of our manufactories have increased. We use 75% of the raw silk produced in Japan and about 40% of the raw silk of Italy comes to the United States for manufacture. Today there are no more secrets about this lustrous fibre but the full story of the possibilities of silk has yet to be written.

The derivation of our word silk adds to its romantic history. The Latin word for silk, *sericum*, is derived from

Seres, the Roman name for the Chinese. That in turn was probably evolved from the Chinese word *ssé* which means silk. The Italian word *seta*, the Spanish *seda*, the German *seide*, and the French *soie* are therefore all closely related and from the same root. From these words come some of the old names for different kinds of silk. There was *holosericum*, a medieval all-silk fabric, *subsericum*, a fabric that was only partly silk, *cedal* or *sandal*, a thin silk for linings, and *satin*, the glossy silk.

The successful handling of silkworms and their cocoons is a very difficult task, one that is full of hazards. A temperate climate is needed and the best results are obtained when great care is given to their feeding. This ashy-grey horned worm about three to three and a half inches long weaves a house around itself in which to sleep while being transformed into a moth. The thread comes from the mouth of the worm as a transparent sap which hardens as soon as exposed to the air. The filament is thrown about in a kind of overlapping figure eight layer upon layer. The outside is fastened securely with a gumlike substance which has later to be removed to obtain the pure silk fibre. The so-called *hard silk* still has some of this gum in it.

This building of the cocoon takes three to four days, and it is a fascinating procedure to watch. With the work of spinning and building done the larva is completely hidden inside the tiny white cocoon where it awaits the transformation from unlovely worm to beautiful moth. When it is quite ready to emerge after about two weeks it bursts the cocoon open and after a few moments of getting adjusted to a busy world about it, is ready to try its fragile wings. But life is short and there are eggs to be laid before the task is done. During the next four to six days the eggs are laid, five hundred or more, and very soon after that the lovely moth dies. From these eggs come the worms and so life goes on and on.

But those who stand by and wait for the little worm to

finish its task of spinning are not willing to wait for the moth. If the moth breaks open the cocoon then the long filament is destroyed and only fragments remain. The silk must be reeled off from the live cocoons while it is still in one long unbroken strand. Four thousand yards is considered an average length for the filament of which the cocoon is made, but of this amount only three hundred to one thousand yards can be reeled off. The cocoons have to be put in boiling water to remove the rough edges of the gum with which the ends are sealed. With the end loose the cocoon is ready to be spun out, six or more frequently being reeled together to make the first usable fibre. When the second throwing or spinning is completed thirty-six to fifty filaments are combined to make one thread of silk that is even finer than a human hair. This silk is so delicate that thirteen hundred to fifteen hundred yards of it will weigh only about one seventh of an ounce.

Some of the moths are always allowed to break through their cocoons so that they can lay their eggs and thus keep the industry revolving. These broken cocoons are used to make what is called *spun silk*. This costs about half the price of real silk as it is made from the waste silk that covers the cocoons, from those cocoons that the moths have broken through and from the fluff that escapes and the waste that is bound to litter up the mills. Spun silk instead of being reeled like pure silk is all torn up to bits and then spun like cotton.

Wild silk is used to some extent for certain rough textured fabrics like shikii, pongee, etc. The worms are stronger than the *bombyx mori*, the best known of the fine Chinese silkworms, and they feed on oak and other trees instead of the white mulberry leaves. The fibre is yellow and is usually quite difficult to reel off. Most of this wild silk comes from India and the interior of China, where there is plenty of cheap native labor that can be employed, first in climbing the trees to get the cocoons, and later for the rather crude

spinning and weaving. There are four to five hundred kinds of silk-producing moths, all of them carefully classified as to habits and the type of silk produced. The thick and strong silk from the Punjab in northwestern India is distinctive. It is closely woven and is quite free from the usual gloss which to the Hindu taste is vulgar and always to be disdained.

Unfortunately silk fibre lends itself to adulteration. It can absorb once, twice or even seven times its own weight in metal without losing its lustre. Twelve ounces of boiled silk can be increased to eighty ounces and still the fabric will look very bright. Raw silk is usually weighted with salts of tin or iron. It is this weighting which causes silk to crack so easily, for a fabric of pure silk will last through centuries as is proven by some of the splendid old pieces that are preserved in our museums.

There have been many gorgeous and intricate varieties of silk made in past centuries, among them the famous *Cloth of Tarsus* which was a fine silk, a kind of purple *camoca* (see Glossary). *Baudekins*, the name from Bauldeck or Babylon, were wondrous fabrics made in Bagdad. They were fine silks combined with tinted cloth of gold and enriched with embroidery which were used as draperies over the throne or for kingly palls. *Cloth of Gold*, the famous "drap d'or," of the fourteenth, fifteenth and sixteenth centuries was sometimes made entirely of gold thread, but more often it was combined with silk. Gold threads formed the basis of the design which was frequently interwoven with velvet or satin. Other and more familiar silk weaves are all listed in Chapter XXV.

The story of silk could go on and on, for history and literature are full of allusions, suggestions and illustrations as to uses of this lustrous fibre. People have been sold into slavery for it, courts and crowns have been wrecked by it, but throughout the centuries it has held its place as the leader of beautiful fabrics.

CHAPTER IV

Oriental Textiles

1

THE ART OF WEAVING IN CHINA

THE story of silk and the history of textiles in China are so closely interwoven that it is difficult to determine where one stops and the other begins. The fine quality of Chinese silks has always been enhanced by the beauty of the design and the subtlety of the color. Whether intricately woven or finely embroidered their symbolic patterns have ever held a unique place. China is the one country that has maintained her traditional designs down through the centuries. As Chinese workmen have never been cursed with originality for several hundreds of years they have worked over and over the same designs, ever bringing them nearer to perfection. The patterns found in modern Chinese damasks are the same as those woven centuries ago, and the patterns used for Chinese porcelains today are developed from rare old brocades.

The art of China has been strongly affected by the three different religions which have claimed the prayers of her millions. They have particularly influenced textile designs which have always served as an outlet for symbolic expression. *Taoism*, fundamentally a religion of love, was ultimately debased into a religion of fear. Nevertheless the early

influence of the believers in this faith cannot be overlooked, for some of their symbolic patterns have lasted through the ages. Astrological signs, swords, bamboo, and a variety of musical instruments can all be traced to this early religion whose followers believed that all humans who attained immortality dwelt in the Garden of Paradise. *Confucianism* was the philosophic religion founded on the tenets of ancestor worship. This belief did little for the advancement of art for it was based on mental and not emotional reactions. Certain motifs, however, like the scrolls, the chess-board, the book, the pearl and leaf are definite derivations from that source.

The third of these religions was *Buddhism*, a faith built up on the teachings of a great leader, Buddha who lived in the sixth century before Christ. A Hindu prince, born to luxury, he renounced all worldly attachments and took to the study of the spiritual life of mankind. The creed he finally established was one of self-culture and universal love. Buddhism with all its ramifications was not introduced into China until the first century A.D., but since then it has held its place down to the present day. The Chinese have always seemed a serious-minded people, and perhaps the force of a god who smiles only upon those who have done their duty appeals to their prudent intellectuality. No one desired to portray Buddha himself, but the wheel that represented the eternal truth of Buddha was a decorative as well as a meaningful addition to any robe.

The story of silk led us back almost three thousand years before our Christian era, and weaving must have been known in China at about the same date. According to tradition the first draw-loom was built in 1298 B.C. When about a thousand years later the trade routes were extended, even the more obscure places were within reach of the textiles from the manufacturing centers. Not that there were such well-established trade routes as Marco Polo followed, but early

writings indicate that at that time there was a good deal of inter-trading between large cities and smaller towns. By 700 B.C. water routes made all the Oriental coast accessible and commerce increased.

Probably very little silk was being handled at that early date and certainly no fragments have been preserved. Though the records of trading in the ancient city of Pekin include references to raw silk, it was presumably not sold in any quantity. Confucius (551-479 B.C.) made frequent mention in his writings of both silk and hemp. By the first century B.C. there was a prosperous inter-commercial activity with the Near East. China was then the only source which could provide the wealthy kings of the Mediterranean countries with silk. Once they had seen its lustre nothing else would serve in its place.

The royal houses of China used quantities of rich silks, but it was not until the thirteenth century that cotton became an important item for costumes. Though cotton was brought into China from India via the oldest caravan route as early as the second century, and Marco Polo found it in one of the southern provinces where it had newly come from India, it was 1364 before any authenticated record was kept of its production, even in the southern part of that enormous country. The native artisans later became adepts at tie-and-dye and resist-printing, following the same methods used in India, Borneo and Peru. They even developed the art of block-printing though not reaching any such heights as were attained in Europe.

The tales that have been told and could be told of adventures along the old caravan routes are legion. If Marco Polo in the thirteenth century found them full of thrills, think how much more hazardous they must have been before his day. There were three main routes out of China, one by way of India and then through Mesopotamia and Syria to the Mediterranean Sea. The colder and more difficult jour-

ney was by way of the Caspian Sea and thence down to the busy trading centers. The oldest and most used was the route via Arabia and the Red Sea to Egypt. Long camel trains started out that never reached any destination. Fragile Chinese junks found their way through the turbulent Indian Ocean only to disappear forever. But many made their ports, the ships of the desert as well as the ships of the sea, and from them came the stories of thrilling adventures. Bales of raw silk were traded for precious jewels. Rubies and coral and silver were exchanged for this lustrous and mysterious thread. Garments of unfamiliar style and woven with strange patterns were traded for skins of wine or kegs of honey. In comparison, mere coin of the realm seems cold and meaningless exchange for our modern merchants.

From the Han dynasty of the second century come some of the earliest dated Chinese fabrics—brocades which von Falke considers, precede all other silk discoveries. The material evidences of silk outside of China are more definite than those found within the great Empire. By the fourth century Syria and Egypt were textile centers with commercial activities reaching to the Far East and it is from their records that we glean the extent of Chinese trade.

The great Middle Ages from the seventh to the fourteenth centuries were a glorious phase of Chinese art. An occasional outside influence added a piquant flavor to pure Oriental design, particularly the Christian motifs picked up in the Near East. Mohammedan settlements in China which existed from 618 until the beginning of the tenth century were the source of the Arabic motifs and inscriptions which frequently crept into Chinese fabrics of that period.

That the Chinese have always recognised silk as one of their greatest assets is evidenced by their joint celebrations for agriculture and sericulture, which up to the establishment of the Republic took place annually. The Emperor, as the chief agriculturist, ploughed a furrow and conducted special

services at the Altar of Agriculture which is near the Temple of Heaven in the old imperial city of Pekin. At the same time the reigning empress presided at a special altar reserved for sacrifices to the continued prosperity of sericulture. An old engraving in a book illustrated in the year 1210 showed a loom constructed for weaving elaborate flowered brocades similar to those made on the intricate Jacquard looms of today. Even at that time the craftsmen of the Far East were experts at dyeing as well as at weaving and their color combinations were a source of delight. It was after Marco Polo's discovery of their clever use of indigo that he introduced it into Europe.

There are many references to the fine craftsmanship of the Sung dynasty (960-1280) and some of the patterns established then are still being woven in modern times. They made an effort to incorporate Buddhist symbols with those of Taoism and Confucianism which were already firmly established. The thirteenth century, the age of the magnificent Khan, was productive of new designs, symmetrically placed in the Persian manner, for no pure Chinese design was so evenly balanced.

Two word pictures of Marco Polo's indicate the lavishness and elegance of the court of Kublai Khan. He relates the story of the birthday celebration of the great Khan as follows:

Upon this anniversary the great Khan appears in a superb dress of cloth of gold, and on the same occasion full twenty thousand nobles and military officers are clad by him in dresses similar to his own in point of color and form, but the materials are not equally rich. They are, however, of silk, and of the color of gold, and along with the vest they likewise receive a girdle of chamois leather, curiously worked with gold and silver thread and also a pair of boots. Some of the dresses are ornamented with precious stones and pearls to the value of ten thousand bezants of gold, and are given to those nobles who are nearest to his majesty's person.

These dresses are appointed to be worn on the thirteen solemn festivals celebrated in the year. . . . They are not annually renewed, but on the contrary are made to last about ten years.

Continuing his tale he still further describes the costumes of the court:

On these twelve thousand barons he bestows thirteen changes of raiment which are all different from one another. In one set twelve thousand are all of one color and there are thirteen sets of colors. These robes are garnished with gems and pearls and other precious things in a very rich and costly manner. The emperor himself has thirteen suits corresponding to his barons in color though his are grander, richer and costlier.

But not alone in the court did they use these fine silks for in all of the cities he visited west of Peking he found them

busily engaged in the making of silk or the growing of silk worms. Some handled large quantities of raw silk and others made fine gauze and every other known kind of silk.

The establishment of the Mongol Empire which extended from China to Persia and Asia Minor was a far-reaching power in the fourteenth century. The Tartars, as they were called in Europe, left a deep imprint on the art of Persia, and in turn on other countries that patterned after her. The famous *tartarums*, which Boccaccio said were so skillfully woven no painter could equal them, were not made in Tartary, but brought through by the merchants en route from China. By that time commerce with the Far East was less difficult and all the European cities felt the riches of Cathay were at their very door. The Venetians, who were such great merchants, sought new fabrics direct from the Orient, overlooking the intermediaries in Persia. Perhaps that is why there are to be found in the treasuries of Christian churches,

such as those in Perugia and Danzig, so many elegant Chinese brocades. They were used even for vestments, and if a stray motif of heathen symbolism crept in, any prelate could ignore it in his admiration for the beauty of texture and design. A special type of silk was woven for export to the followers of Islam, all the patterns supposedly within the prescribed limitations.

There was a tremendous variety of design in Chinese textiles, despite the fact that Nature was the outstanding influence. The floral patterns were far more naturalistic than the later Persian or Saracenic ones. It has been said that anyone familiar with the flora of China could easily identify every flower in their favorite hundred-flowers brocade. Vines and bands wandered from side to side but did not create any enclosing forms. The animals were also quite different, never symmetrically placed or encircled, and never stylized. Great ingenuity was exhibited, for both realistic and abstract forms were full of differentiations.

Despite the importance of floral forms the *dragon* was the outstanding motif that even now to many people designates a fabric as Chinese. There were different ways of presenting this imperial personification, but a long, twisting, tortuous body, staring eyes, a gaping mouth and claw-like feet were its component parts. It was the heraldic emblem of the emperor who as the Son of Heaven acted as intermediary between the millions of subjects who abjectly worshipped him and the elemental gods above. The sky dragon was representative of the emperor's power to hold up the sky, while the earth dragon ruled the winds and rain clouds. The imperial dragon had five toes, and presumably none below princely rank was entitled to wear it on his robes. A four-toed dragon did for certain lesser princes and for princesses who had royal prerogatives without imperial rank. Even greater distinction was shown, however, by the number and placement of the dragons on the ceremonial robes. The em-

peror was entitled to nine, for nine was a symbolic number, referring to many things ranging from the nine sections in the Science of Mathematics and the nine sections in the Book of History to the nine provinces and the Nine Palaces of Color.

In addition to the dragons on the sacrificial robes of the emperor appeared the *twelve imperial ornaments*:

1. The Solar Disc encircled a three-legged bird resting on a bank of clouds.
2. The Lunar Disc included a hare with mortar and pestle compounding the elixir of life.
3. The Constellation of Three Stars, connected by straight lines, rode above the clouds.

(These first three symbolized the light that the King shed upon the world.)

4. The Mountain which distributed clouds and rain symbolized the beneficence of the good King.
5. The Five-Clawed Dragons, always in such different positions, were representative of the King's adaptability.
6. The Flowery Bird, the vari-colored pheasant standing on a cloud, symbolized cultural accomplishments.
7. The Temple Vases or the Cups were ornamented with a tiger and a long-tailed monkey.

(The symbolism here is slightly confusing though obviously it referred to the King's superior power.)

8. The Water Grass, rising and falling with the tide, symbolized the King being ever-present in time of trouble.
9. The Fire (Scrolls) was necessary for cooking, making pottery.
10. The Millet, small grains in a medallion, was the thing upon which life depended and symbolized the King as the power behind all life.
11. The Warrior's Ax was the emblem of the ability of the King to cut away whatever was needful when the occasion arose.
12. The Symbol of Distinction (Fu), an abstract figure like two E's back to back, typified the working together of the King and his ministers.

The imperial robes on which these symbols appeared were indicative of the Universe. Clouds mingling with dragons and the twelve symbols in the main part of the robe represented the sky. The waves and the strangely created mountains which formed the lower border symbolized the water and the earth.

Other familiar Chinese symbols can be found on the robes and hangings belonging to the empress, the lesser court and the priests. There are many Buddhist and Taoist emblems, some that lead back to ancient Chinese lore. Others without definite origin mingle freely with the significant ones even in a priest's robe. The *phoenix*, a bird with long claws and a plummy tail, was usually the emblem of the empress, though the male bird could be used by the emperor. The *knot* of destiny occurred frequently. One student of this ancient symbolism believes that this may have come from the story of Confucius suggesting to the Taoists that it would be better for them to give up writing and take to tying knots in a string. The *unicorn* (khilin), a beast of good omen, looked like a deer with horse's feet and the horns of a bull. The lion, which is not a native beast of China, was represented as they imagined it, part dog, part beast, its curls not unlike those on the head of Buddha. As *Fu dogs* they guarded the entrance to any Chinese home or temple, but were seldom represented in textile design.

The *chou*, an abstract key or fret motif, could be depicted in at least a hundred different ways. It formed either a circular or polygonal medallion without any enclosing frame and looked not unlike a number of Chinese characters interlaced. Having neither beginning nor end it represented the old idea of longevity. A canopy or *umbrella* was the emblem of authority. Another abstract symbol, the *swastika* or fylfot, was often combined with floral forms. It was a kind of crooked cross, a Buddhist symbol of good luck which has been adopted by many other countries.

Fish frequently appeared for they were symbolic of abundance and wealth, or of a happy and fruitful marriage if that meant more. The tortoise was another emblem of longevity as was the lotus. Flowers and fruits were favorites for they could be pictured in so many different forms. The four seasons could be portrayed by using the plum, the peony, the orchid and the chrysanthemum. The rose, iris, and almond blossom were all adaptable to forming squares and medallions. The bamboo and cherry were light and dainty. Grains of rice, seaweed and other flowering water plants were all used decoratively. The Chinese cloud was a favorite motif that the weavers of Venice appropriated, though they interpreted it in an entirely different manner. The Chinese enjoyed wild geese flying through clouds, the dragon coiling through one hundred flowers, butterflies, and the graceful floating ribbon which was a symbol of heaven.

They were especially artistic in their use of subdued color. Though their robes were rich in hue or gay and brilliant, they were never blatant. All the off-tones of yellow, blue, pale green, white, salmon pink and so on were blended together with never a strident note. Certain symbolism was attached to the colors as well as to the designs. Yellow was the emperor's color and he used it everywhere from the tiles on the roof of the imperial palace to the satin background for his robes. It was the color used for the Temple of the Earth in contrast to blue for the Temple of Heaven and white for the Temple of the Moon. Red, orange and all tones of yellow were reserved for the imperial household. Yellow has also been used exclusively by the Buddhist church. Even today you will find the varying tones of yellow in the fading robes of the Buddhist priests making sharp color accents against the general drab background of a Chinese street.

Red was the color for the Temple of the Sun, and a red ball was a symbol of light. Both Taoist and Buddhist priests

wore it for their ceremonial robes. But now it has no such reservations and has become the symbolic color to express the height of formality and dignity for all classes, even for weddings and funerals. Blue was one of the Chinese hues that was especially significant. Quite unlike the royal Persian blue or even the eighteenth century French blue it was an off shade that was very subtle in its composition. During religious ceremonies at the Temple of Heaven the priests wore blue brocaded robes while a blue light shone on the altar and on the blue sacrificial vessels. The blue of a later China was less elusive and more popular with the masses, but quite without significance.

To use these symbolic patterns and subtle hues they had to have gorgeous fabrics. Apparently even at an early date they had full control of all branches of the art of weaving. They recognized its limitations as well as its possibilities. The brocaded satin which was made for imperial use was like that made today. A flat damask woven either in a heavy silk or a thin gauze was a favorite for costumes. But the most priceless of Chinese textiles was the tapestry weave known as *k'ossu*. On some of the more beautiful robes it is difficult to determine where one part is separated from another so fine is the work. Many people raise the question as to whether velvet was originated in China or was brought in from the West. It seems quite likely that such expert weavers should have known how to make pile fabrics, though there are no fragments extant from an early date. The fine Chinese velvets of later centuries might well have been copied from those of the Near East. Embroidery, too, played an important part in the creation of these beautiful fabrics. A whole treatise on the many stitches would be just a beginning in this fascinating study.

Just as long as the imperial court held sway over China, just so long did she hold her place as a past master of the art of weaving. But with the downfall of the Son of Heaven,

with the establishment of a republic, China became so embroiled with politics that the arts were left to decay. They do still weave beautiful textiles, but not in the old manner. Those made for export are not created with the same inner enthusiasm which went into a ceremonial robe for a great emperor. It is now a matter of commerce and economics, and no longer a much sought-after privilege. We can but give thanks that such a large number of fine costumes and hangings have been preserved so that we may know the glories of old China.

2

THE FABRICS OF JAPAN

The story of the textiles of Japan follows rather closely the development of weaving and designs in China, though aside from a certain exotic flavor the fabrics of present day Japan and China have little outward resemblance. China has always been the leader to whom all Oriental countries have turned for their artistic inspirations and the individual styles have then been developed from the solid foundation borrowed from her.

The Japanese were the first to acquire from China the secrets of silk culture and from that day they have cherished it as one of their most valuable products. Centuries ago many Chinese weavers moved to Japan at the promise of riches. Some even became naturalized, while others settled in Korea where they specialized in making a fine silk gauze. Weaving has always been fostered as an art in Japan and treated with as much reverence as in China, an ancient metal loom even being preserved as one of the sacred relics in a Shinto temple.

As in all countries religion has been an important factor in the development of design. *Buddhism* was the dominating force of the sixth century, though architecture was more af-

fectured by it than design. The fine Buddhist temples were used not only for worship but also as centers for learning. The splendid rituals which the Japanese evolved from this faith are a combination of reverence for their god and for scholarship which is of far greater importance to the mass of Japanese than to the same class in China. The art of that early age is necessarily religious and shows very little imagination. Textiles were woven in quantities, but without any strong characteristics.

The *Zen* sect was the popular religion from the tenth to the thirteenth century. Believing that all nature was divine it furnished a new impulse to every branch of art. It in turn was followed by the *Shinto* faith which held the same belief but went further in the encouragement of love of all nature. That is the faith of present day Japan and to a large extent accounts for their extravagant use of realistic floral motifs in all forms of design.

The various foreign influences that affected China usually reached over to Japan. They, too, had magnificent courts made notable by the gorgeous textiles used for ceremonial robes. Marco Polo recounted some tales of the island "called Zipangu," tales that fired the imagination of the various adventurous spirits of his day. Columbus, as well as many others, sought a short route to this romantic spot. But it was the Portuguese, those venturesome traders with such shrewd commercial instincts, who first visited the islands in 1542 and established trade relations. Not long after that the Japanese began to fare forth on quests of their own and their envoys visited both Italy and Spain in 1584. Thereafter, their designs showed a definite European trend which had not reached them via China.

That did not last long, however, for most aliens and all Christian missionaries were expelled in 1638. With practically all foreign intercourse forbidden they set about the perfecting of their own ideas, and art and literature seem

to have flourished in the following two hundred years. Both Dutch and Chinese ships touched at their port cities, bought their merchandise and carried it to the far corners of the earth, but no outside innovations were allowed to creep in. This seclusion was bad for their trade, for all this time they had continued to buy raw silk from China though they had no market there for their own goods. In 1858, seeing the error of her ways, Japan opened wide her doors to European trade.

Most of their motifs were like the old Chinese ones, but the chrysanthemum, peony, iris, lily, cherry, plum, bamboo, and birds and fish and dragons were the favorites. The Japanese also developed significant emblems for the seasons, the elements, the duration of life and so on. Those who know say that the myths and legends of Japan are more picturesque and more numerous than those of China, even being comparable in charm to those of ancient Greece. Some few symbols were of Buddhist derivation but the later ones were largely inspired by the Shinto faith. The dragon, signifying power and wisdom, was sometimes celestial, and sometimes of earthly origin with only three toes. Have you noticed that to the Oriental mind the dragon has always personified force and a power for good, while to the western mind it is a loathsome beast, significant of hatred and destruction?

To acquire an appropriate humbleness of mind Buddhist priests have always dressed in rags. Even today in most of the Oriental countries the haggard priest in his tattered yellow robes clutching a begging bowl in his hand is one of the colorful, though occasionally unpleasant sights. But in Japan the high Buddhist priests of the past evidently felt that they should not wear such humble garments at their altars, and yet realized that they must keep within the sacred precepts. The compromise they effected was to wear silken robes which resembled patchwork, for forty-eight different pieces of various colors were all carefully and beautifully

sewn together. Some of these ancient priests' robes form a notable part of the big museum collections of today.

The Japanese were quite familiar with the art of resist-printing, batik making and block-printing, though they specialized in stencils. From the earliest days they had been familiar with cloth made from bark fibres, and then of hemp, so they were quite ready to handle silk when it was first brought to them. Wool was in use by the sixth century but cotton was not popular until the sixteenth century. They knew how to weave the finest damasks and brocades, and even brocaded velvets with cloth of gold for the background were made during the eighteenth and nineteenth centuries. They are accurate craftsmen, and when they have once acquired a technique—or a fact—it is theirs forever.

The costumes of Japan, prescribed by ancient ceremonial laws, are picturesque, though scarcely suited to the hustle and bustle in their modern commercial cities. One's caste or status in society has always been designated by certain distinguishing marks of costume—and what can contemporary dress for man or woman offer in that respect? The fine Japanese prints which are such perfect examples of artistic composition are also veritable tablets of instruction as to costumes when the human figure is included. Study of almost any one of those old prints will disclose the collection of patterned fabrics with which a well-dressed Japanese was garbed.

The modern Japanese are not so different, except that their outer kimonos for everyday wear are more sombre in hue. Some say that it is not a graceful garment, but they make it so and when one sees a ceremonial dance the kimono seems well adapted to the slow rhythmic movements. Some of the handsomest costumes brocaded in gold have been made for the celebrated Nō dances, those picturesque ceremonies of old Japan. The narrow sashes worn by the men and the neck bands which are slipped inside the crossed folds

of the kimono are still samples of a master weaver's art. The *obi*, the heavy sash that the women wear, is heavily brocaded or covered with fine embroidery, depending upon the occasion for which it is being worn. In a land where all men, women and children wear patterned fabrics an appreciation for fine weaving must be inherent.

CHAPTER V

Cotton in India

IT HAS been said that "cotton is the crop that clothes the world." For that reason then, if no other, India takes her place as a really important contributor to the history of decorative textiles. India and cotton go hand in hand from as early as 500 B.C. down to the present. Despite the fact that America now leads in quantity production India is still the home of the cotton industry. Hand-loom weaving is even today the greatest non-agricultural industry in India. Her weavers from very early times have known other fibres and have been familiar with a great variety of weaves, but cotton, and printed cotton at that, has always been of prime importance.

Authentic records indicate that weaving was one of the earliest crafts in Egypt and China but we have to assume without any historical documents to prove it that India was familiar with the process at an equally early date. However, instead of interwoven patterns such as were produced in the other countries, the craftsmen of India probably made a plain cotton cloth which they decorated with dyes and paints. This made for greater originality and variety while at the same time it was a simple process to follow even for the untutored. Unfortunately none of these early fabrications has been preserved for us, due largely to the humidity of the air and the many plagues of insects. Even the ancient folk-tales that have been handed down by word of mouth and later transcribed do not give any very accurate facts. We can only

assume certain things from the few prehistoric paintings and crude sculptures that have survived the ravages of time. While there is no specific date to give to the birth of weaving in India it is evidently quite as old as their oldest gods.

The knowledge of fine cotton weaving may have travelled from India up to Assyria and thence through Phoenicia to the port towns of southern Europe. Or, as already noted, weaving may have spread from Egypt to those nearby ports. But whichever its source cotton weaving was not practiced throughout Europe prior to the thirteenth century. By that time India was equally adept at weaving rich brocades and sheer silks to which fine embroidery was added.

Some centuries before the Christian era the fame of the printed cottons of India had spread abroad. Herodotus in 445 B.C. wrote of India, "They possess a kind of wild plant which instead of fruit produces a wool of a finer better quality than that of sheep, and of this the Indians made their clothes." Another Greek writer of the same century mentioned the bright colors of these prints and their popularity with the women of the eastern Mediterranean.

When Alexander the Great invaded India in 327 B.C. he was tremendously impressed with their advancement. He took back home with him some of their printed cottons as well as many of their finely woven silks which he considered comparable to those of the master weavers of China though their manner of decoration was similar to that of Persia. Strabo, writing early in the Christian era, referred to these "flowered robes" brought back by Alexander, indicating that they had thus long been treasured as something valuable. One of the greatest generals under Alexander kept a journal of all their adventures and therein recorded what he considered an interesting statement regarding the clothing the Indians made out of "linen from trees." Though his descriptions of their costumes are not so elaborate as we might have wished he did note that "the natives made linen (cotton)

garments, wearing a shirt which reached to the middle of the leg, a sheet folded over the shoulders and a turban around the head."

The Greek ambassador to the Indian court in 300 B.C. was impressed with the fact that

In contrast to the general simplicity of their lives, the Indians love finery and ornament. Their robes are worked in gold and ornamented with precious stones, and they wear also flowered garments made of finest muslins.

Though there is no definite reference to cotton in the English Bible printed cloths were mentioned in the original text and undoubtedly Joseph's coat of many colors was of hand-printed cotton. When the Mohammedans invaded India in 711 they were particularly intrigued by these painted and printed cottons which were evidently something new to them. They carried many away with them as they did also the Indian brocades heavy with gold and embroidery.

It was not until the fourteenth and fifteenth centuries, however, that the Indian weavers began to export their decorated cottons. By that time the Venetians had built up an extensive trade with the Indians despite the fact that they never sent their own ships beyond Alexandria and other ports of the eastern Mediterranean. But the market to which the Venetian traders catered was more interested in silks and cloth of gold than in printed cottons. Portugal was undoubtedly the first to discover the value of these prints and it was her venturesome traders who brought them to England and France.

One of the small Portuguese ships seized by Drake when he was clearing the seas for England was loaded with calicoes, lawns, quilts, carpets and other products of Indian looms. Cargoes of that kind quickly caught the public fancy and stimulated the English merchant traders to try to estab-

lish direct trade routes so that the wealth of the Indies would be within their reach. Holland and England were soon seriously interested and sent out their own merchant ships to establish trading centers in India. Though there is a record of printed cottons being used for dresses as early as 1498 it was not until the sixteenth century that trade between East and West really flourished. At that time Bruges was the great distributing center but was soon replaced by Antwerp. Amsterdam next took the lead and in the seventeenth century France and England and Holland were all vying with each other in the importation of colorful and charming chintzes. The Dutch East India Company was one of the more famous organizations dealing in exports from India, though of course the historic East India Company of England eclipsed all other ventures in that field.

Despite the great efforts that all these countries made to cultivate cotton, and though they followed Indian methods of printing they soon discovered that they could not compete with the fine imports. The western agriculturalists and weavers and dyers had not the patience to follow the prescribed methods of the Indians, and at that time they had not the ingenuity to develop their own. They finally decided it was much simpler to import the prints all ready for use. The story is told that King Charles I sent white woolen cloth all the way to India to have it dyed according to their methods and with their patterns. That probably started the vogue for the "Manchester cottons" which appeared in 1641. But as they were made of wool and decorated with inferior patterns in imitation of Indian ones they did not have much chance to supersede the imported chintzes.

During the seventeenth century the *Compagnie des Indes* began to ship these decorative cotton prints which they called *indiennes* direct from many of the Indian ports to France. The more exciting stories regarding the exportation of the chintzes and of the rivalry of the great companies

who handled them were told during the early eighteenth century. (Further reference to them can be found in Chapter XIX.) It was then that France developed an aggressive policy out there in the Indian Ocean and took part of the Coromandel coast. As this included some of the best cotton growing country it put her a step ahead for the time being. In 1774 she took Madras from the English, the city that has always been famed as one of the leading centers for cotton weaving in all India. Each of the European countries was seeking footholds from which they could export the chintzes and cottons which were proving so popular in western Europe. By the end of the eighteenth century the English had once more gained the upper hand and their first colonial governor was appointed—the famous Warren Hastings who did so much to bring quiet to a chaotic country. The looms of India are still busy for though the Indians export very little cotton cloth today compared to the great cotton towns of England they have built up a tremendous domestic business.

Pliny gave a picturesque if not altogether accurate account of the early methods of printing. That it was a long and tedious task is evident, but as native labor was cheap and plentiful that aspect presented no difficulties. Part of the pattern was achieved by mordants, that is the use of various chemicals to mark out certain designs so that different colors would result from a single dye bath. Other portions of the pattern may have been done by resist, using wax or something similar to cover the parts of the pattern that were not wanted in that particular color. When the piece was dyed all but the exposed parts resisted the dye. The third process was done by hand, the stencilling in of the fine details with dye.

The process which was developed in Madras is still followed there for all modern hand-work. The cloth they used had a close texture and was probably unbleached. During the operations of dyeing and bleaching the lengths of cotton

were spread out on the river bank in such a way that the water ran over them almost continuously for three or four days. The Indian belief that only certain streams should be used undoubtedly had its origin in the fact that minerals in some of the waters were helpful in setting the dyes. After a second treatment the cloth was softened by being pounded with a large wooden mallet. Sometimes for an elaborate pattern the fabric was dyed six or seven times with soakings, bleachings, washings and beatings between each dose. Obviously it had to be good cotton to stand all those harsh preliminary treatments.

The design was drawn out on paper and then "pounced" on the prepared cotton with charcoal. If a definite outline was desired a pen-like tool made from bamboo was used to complete the meagre outline left by the pounce. The black dye with which this was done was made by a devious method from old iron. With the pattern outlined and certain parts blanked out with wax it was ready for the dye. Red was always applied first, then after the necessary washings, bleachings and poundings the cloth was ready for the blue dye which was made from indigo. The final color, yellow, served a dual purpose for it made certain parts yellow and certain other parts green when printed on top of blue. No fabric that is printed with a green dye is a really old one for it was not until 1809 that a solid green dye was discovered. Another washing and bleaching was necessary before the material was subjected to a coat of sizing which had been prepared from goat's milk to prevent the colors from running. A final smoothing or pressing and the cotton print was ready for the market.

Wood blocks were not ordinarily used in India until after the seventeenth century, and the freedom of the pattern which resulted from having each design drawn in by hand was a great part of the charm of the old prints. Another advantage of a hand-drawn design was that it could be

changed and rearranged to suit any piece of cloth. The carved teak-wood blocks could be used in a variety of ways, too, for they were usually small, only five to ten inches in size. These two methods of printing cotton are still in use in India today.

Father Coeurdoux, a Jesuit missionary priest, writing home in 1742, described the traditional methods used in India for printing the fast color decorative chintzes which he found so attractive. The following excerpts from his long and detailed account give a fairly accurate picture.

These cloths are chiefly valuable because of the "vivacity" (if I may so express it) and the lasting quality of the colors with which they are dyed, which far from deteriorating when washed, only become more beautiful. It is this quality, which Europeans have not yet succeeded in imitating, that I now have learned to obtain.

In order to render it smoother, and to facilitate the use of the paint brush, they fold it in four, or in six, and with one piece of wood they beat it on another very smooth piece, taking care to beat it equally all over, and when one part is sufficiently beaten, they re-fold it, and recommence the operation.

When the cloth has been prepared thus, the flowers and other things to be painted on it must be drawn. The Indian work-people have no peculiar method, they use the same as our embroideresses. The painter draws his design on paper, and pierces the principal lines with a fine needle. Placing the paper on the cloth he pounces the design. That is to say, he passes charcoal powder tied in a knot of muslin over the pricked holes, and thus the design is transferred to the cloth. Any kind of charcoal will do, except that of the Palm, which, say the Indians, tears the cloth.

Lastly, they follow these lines with a paint brush and black or red color, and the work is outlined.

After having drawn, and painted with black, all the parts required, the red outlines of the flowers, and of other things which should be drawn in this color, are added.

The blue, which requires a great deal of preparation, is also applied.

As the blue is not applied with a brush, but by soaking the cloth in prepared indigo, it is necessary to coat the cloth with wax all over except on those parts which are already black, and those where blue or green are to appear.

This wax is applied with an iron brush, as lightly as possible, on one side only, taking care that no part remains uncoated, except those that I have mentioned. Otherwise there will be blue marks which are ineffaceable. The cloth is even exposed to the sun, taking care that the wax only melts enough to penetrate to the other side. It is then turned over, and rubbed briskly with the hand.

After blue, the red must be added, but first the wax must be removed from the cloth. It must be bleached and prepared to receive this color.

The way to remove this wax is to put the cloth in the boiling water; the wax melts, the fire is slackened, in order that it may solidify, and the wax is removed very carefully with a spoon; the water is again brought to the boil, and what remains of the wax is removed.

Although the wax becomes very dirty it may be used again for the same purpose.

In order to bleach the cloth it is washed in water, and beaten nine or ten times on a stone, and immersed in fresh water in which some sheep droppings have been soaked. It is again washed and spread out in the sun for three days, and sprinkled with water as before.

The red is often applied by children, as it is not a difficult task, unless a very perfect piece of work is required.

There remains but the yellow, which will not require much explanation. The same dye used for green by painting over blue, serves for yellow by painting on a white ground, but it is not permanent.

Whether cotton was first grown in India or on some of the many islands of the South Seas has never been determined exactly, but it must have been at a very early date when some one discovered how usable it was. Our word cotton is derived from the old Arabic word "Katan" which referred



PLATE 5. *Top.* An imperial court robe of the Ch'ienlung period. The imperial dragons are embroidered in couched gold and silver thread on a brown satin background.

Courtesy Metropolitan Museum of Art, N.Y.

Bottom. A detail of K'ossu from the Ming dynasty. This heavy silk Chinese tapestry includes touches of gold.

Courtesy Metropolitan Museum of Art, N.Y.



PLATE 6. An Indian palampore from the seventeenth-eighteenth century.
The brilliant polychromatic pattern was achieved by resist-dyeing and painting.

Courtesy Metropolitan Museum of Art, N.Y.

to flax, though there are earlier words in Sanskrit which were used for the same plant. Travellers in India today, just as hundreds of years ago, recognize the superiority of cotton for clothing. It is cooler than silk or linen which is a most important factor in any land where the sun beats down as heavily as it does in India and the islands of the great South Seas. The natives of India have always used it for garments, for turbans, for hangings and for bed covers. It is only in the mountains of northern India that sheer wool is more in evidence.

Sea island cotton which has long been a standard of excellence may have come from India originally, though some credit it to the United States and today the greatest quantity of it is grown off the coast of Georgia. It is a long staple cotton that is now used only for special products as the cotton gin cannot handle it easily. Egypt has always been famed for the quality of her cotton which has a shorter fibre, one that is more useful in our modern mills. The story of the handling of cotton from the plant to the finished fabric is a long one, one that needs a book to itself. The methods of manufacture are fascinating and the variety of materials that can be obtained from that one source is over-whelming. Used alone it is a splendid textile, used in combination with other fibres it adds durability. It can be as sheer as a fine silk and as soft to the touch, or it can be as heavy as the heaviest sail cloth ever made to catch the breezes from the seven seas.

The more usual printed cottons were put to many uses both in India and in those European countries to which they were exported in such quantity. Indian women even today wear a *sari*, a long piece of material which they drape about them in a most becoming fashion. The *sari* may be of cotton or wool or silk, depending upon the person who wears it and the conditions under which it is worn. Some of the finest cottons, delicately sheer to appeal to the ladies of high caste, were often interwoven with gold, and patterned according

to the part that would be seen. The use of a turban is almost universal, the modern ones being made of strips of cloth from nine to twelve inches wide and fifteen to twenty-five yards in length. Some of the finest ones are as much as sixty yards long. The intricate method of wrapping them about the head is a work of art.

The *dhotee*, resembling a divided skirt when properly draped, is about a yard wide and from seven to eight yards long. It is usually made of cotton with a pattern of checks or stripes. Then there is the *longee* which is a scarf worn over the shoulders. This is about a yard and a half wide and from four to six yards long. This may be of wool or silk or cotton and it usually carries a checked pattern on the border. The *sarong* is the wrap-around skirt-like affair adopted from the islands of the South Seas, where it is worn by both men and women. In modern India, however, it is only the blacks and Malaysians who wear them. As with the early Egyptians the patterns were always placed so that they showed when the garment was properly adjusted.

It was not these native garments however that created such a stir in England and France in the seventeenth and eighteenth centuries. *Chintz* by the yard was sent to England to be used for covering walls, draping beds, upholstering chairs and making fine dresses. The word itself is English, derived from the Hindu word "chint" which meant small spotty patterns printed on fine cotton. A French traveller named Bernier visited the court of the Emperor Shah Jahan in 1663, and in writing home of his impressions told of the "flowered chittes" which lined the courtyard. Most of the remnants of these aged chintzes are patterned with blue in a finely drawn design covering the whole fabric. The yellow which was also included has probably faded away, leaving only a trace of it in the bluish-green foliage. Though these early Indian chintzes have been frequently copied it is usually possible to distinguish the real from the reproduction. If the details of

the two repeats are identical, it is probably printed by modern machinery. Then, too, the colors of the modern prints are harder and more garish. The cracking of the wax used for a resist dye may show here and there on an old chintz while the even spacing of the cracked lines on the reproduction is scarcely artistic.

Calico is another word that signifies Indian cottons to a modern person. The name is derived from the town of Calicut (not Calcutta, as is popularly believed), a small town on the Malabar coast not far from Madras. Presumably this was the first town to start the use of blocks in the printing of cotton. The old "patterned calicoes" to which numerous historians refer were strongly colorful. They had reds that ranged from brilliant crimson to delicate shell pink, and purple tones from deepest violet to palest lavender. There were also blue and a citron yellow which combined to make a rich green long since faded. It is strange that from such a vigorously colored textile our modern version of calico should have derived. For now they are small all-over patterns, usually of only one color, though still printed on fine cotton.

Bhadana refers more to a process than to a kind of cloth. It is the early equivalent of our modern tie and dye. The Hindustani word "to tie" was *bhanda* and the kerchiefs that had been so decorated were called *bhandannas*. The source of our word bandanna is apparent. The spots of color which were obtained by tying tight knots in the cloth and then dipping them in various colors of dye were usually ringed with white where the dye could not penetrate. These knots of varying sizes could be arranged in a semblance of a design which was particularly suitable for a head-dress.

Pintado was the name applied by the Portuguese traders to the printed cottons of the East, especially those from Calicut. After Vasco de Gama had rounded the Cape of Good Hope in 1498 he opened up trade for the Portuguese in

India. Calicut was one of the better known sea-ports dealing in printed cottons and it was there that the Portuguese saw these finely patterned fabrics that they dubbed "pintadoes."

But most famous of all are the *palampores* and *kalamkars*, the calico bedcovers which spread over England and France in such abundance. When they were new and somewhat difficult to acquire their price was high, one coverlet being worth as much as thirty pounds in England. The name *kalamkar* probably derived from the Persian word "kalam" for pen, as the designs were all drawn in by pen. *Palampore* may have come from Palampur in the Bombay district where some of these early cottons were made, though we usually identify them with Madras where they were printed in such great quantities. They were really large panels about twelve or fourteen feet high by eight or nine feet wide that could be used for wall hangings, curtains or bedcovers. The difference between a *palampore* and *kalamkar* lay in the method of printing. The *palampore* could be done with a series of small blocks while the outline of the entire pattern of the *kalamkar* was drawn in by hand with a kind of reed pen. The spaces thus outlined were then filled in with the necessary color by means of a brush. Dyes and not pigments were always used. The designs were as carefully thought out as for a fine painting and each one represented a colossal amount of work, for time and patience were needed to put in all the tiny markings of each leaf and the expressive face of each animal. This tedious hand-work has been compared to the "crawling of snails." Nowhere else could they have been done in quite the same way, with quite the same technique and with quite the same flair.

The patterns used on all these cottons were distinctive, though occasionally reflective of some outside influence. Unlike some of the early European prints the designs were not copied from any of the woven fabrics. The pattern of the *palampore*, though really that of the tree of life, was quite

different from the symmetrical *hom* motif of Assyria. This design should more rightly be called the *Garden of Paradise*, for that is what it represented to the Indian. That is why it was always different and ever full of interest. The lush foliage about the central tree was that of the world's ideal garden. The tree itself, realistically crooked, was sturdy and strong, but reaching toward heaven. The ground from which it grew was usually mountainous and filled with every conceivable animal and flower, so finely drawn that at first glance they were seldom apparent. Exotic birds with wonderful plumage perched on branches that were too delicate to hold them. Though these birds were drawn without regard for comparative size, they were always placed in carefully balanced relation to each other, for the design was so arranged as to cover the entire area. The wide borders included either a repetition of certain figures from the central motif or a continuous vine with flowers interspersed. This handsome pattern has always been a traditional emblem of India, a sacred symbol as full of meaning for them as it is of charm for us.

The *pine* or cone motif is the same general form which was used on Assyrian marbles. It is the familiar motif in all Kashmir shawls made of fine Tibetan wool and was later translated into Paisley shawls. These Indian shawls were ordinarily woven on hand-loom in small pieces dependent on the size of the cone motif. These pieces which were really more like paintings than weaving were then sewn together invisibly in a patchwork construction. The pine as they used it was generally bent over at the top to right or left like a real wind-blown cypress. The lower part suggests the rondel form which the Persians found so adaptable to filling spaces.

The Indian *elephant* which they enjoyed working into their designs was different from the Persian or other Oriental elephants in that he had longer legs and sharper toes. Then, too, there was always the distinguishing lotus bud

which appeared on his trunk. The *lotus* rivalled the cone in popularity and the side view of the flower was often so arranged that it resembled a spread fan. The so-called honeysuckle, not unlike that of Egypt and Greece, showed clearly that it was derived from the head of a palm tree rather than from a real honeysuckle. The small all-over patterns which are often classified today as Indian are mostly taken from the prints of the eighteenth century when there was a strong Chinese influence and less fine drawing of details.

These printed cottons were particularly noteworthy for their variegated hues, as the Indians were undoubtedly the first people to work seriously over the development of their sources for dye. In the bolder patterns rather frank use was made of the primary colors and such secondary hues as were not too fugitive. These tones have now been so softened by age that in the oldest chintzes there appears a wonderfully soft rose, a grey blue that is still full of vitality and a soft bluish-green that is extremely difficult to reproduce. Blue has always been the favorite hue with the women of India, despite the very definite rules as to which castes may wear it. Occasionally in the eighteenth century a print was turned out with a dark background, but for the most part the natural bleached tone was preferred. Those with dark backgrounds were dubbed Persian and as "*toiles de Perse*" achieved great popularity in seventeenth century France.

Dacca has always been a name to conjure with for in this town were manufactured the sheerest and finest muslins the world has ever known. They were so valuable that they were sold by the carat, the price depending upon the fineness of the count, that is the number of threads to the inch. Woven on small hand-looms a turban cloth some twenty yards long by one yard wide could be passed through a finger ring. Haroun-al-Raschid received one of those famous *Dacca* turban cloths as a gift, and the story goes that its thirty yard length could be easily folded together to be contained in a

gold coconut shell. When those muslins were embroidered they resembled lace and could well be used in its place. The long staple cotton that grew in the Dacca valley was carefully carded with the jaw-bone of a fish, and only the finest spindles of highly polished wood were employed in the weaving. Stretched out on the ground for bleaching their gossamer appearance evidently inspired all who saw them, for they were given such poetic names as "running water," "woven air" and "evening dew." It seems a tragedy that those lovely cottons so famous in the eighteenth century should now be almost a thing of the past, for only a few of the old weavers still carry on.

CHAPTER VI

The Fabrics and Patterns of Persia

1

DURING THE SASSANIAN ERA

THOUGH there are very few fabrics left from the days of the Sassanian rulers in Persia, the patterns developed at that time have had a tremendous influence on all subsequent textile history. The same motifs can be found in the beautiful Byzantine silks and in the fine fabrics created somewhat later in Spain and Sicily. In fact it has been said that this early Persian decoration has had a more far-reaching influence than even that of China or India. These Sassanians were a line of powerful kings who ruled from 226 to 642 A.D., and it was during this era, particularly from the fifth to the seventh century, that the most distinctive fabrics were created.

Persia, a general name for the extensive Iranian plateau, has been tossed about from one line of rulers to another, for her geographical situation has laid her open to all outside forces. It is the land which one "travels from east to west," and at the same time it is the northern gateway out of India. The merchant traders coming out of the Far East with their camel trains usually stopped first in the easily accessible towns of Persia. Sometimes they sold out their whole load of gorgeous damasks and brocades then and there

when some of the native traders were shrewd enough to buy regal pieces which they knew they could resell to the rulers in Byzantium and Rome. But the greater part of these beautiful silks stayed in Persia where they were worn by the rich potentates who were such lovers of pomp and ceremony.

From the very earliest days the Persians had always acted as intermediaries between east and west, and in that capacity they handled practically all the raw silk that was allowed to leave China. Most of it they kept themselves, weaving rich brocades and damasks intended for their fabulously wealthy courts, which were quite as luxurious as those of the Romans. Occasionally they sent a few pieces back to China—perhaps just to prove how adept they had become at silk manufacture. This exchange of goods brought about an exchange of ideas which may explain why certain Chinese fabrics show a Persian trend, and why so many Persian silks include Oriental motifs curiously altered to suit their more Occidental taste. These Sassanian weavers sometimes borrowed an idea from India, too, but there the tide was really in the reverse direction leaving a strong Persian imprint on all Indian design.

About the middle of the fourth century one of the Sassanian kings, after a conquest abroad, brought back from the Mediterranean coast some Graeco-Syrian weavers. These craftsmen who had been making silks for the rulers in Byzantium proved an impetus to the whole art which in the succeeding years flowered so gorgeously. Chosroes I (531-579), probably the most famous and loved of all the Sassanian rulers, was a contemporary of the great Roman emperor Justinian. He, too, was anxious to improve industrial conditions and under his regime the weavers prospered and the designers put forth their best efforts to create even more ingenious patterns. When Justinian established a monopoly of silk weaving in Constantinople (See Chapter VIII), some of the best weavers left his realm and migrated to Persia.

They were accepted eagerly, for of course they were experts at making the silks then in demand at the emperor's court. They introduced to their Persian co-workers all the Graeco-Roman designs with which they were familiar, but though there may have been a momentary slant in that direction, they did not really have much effect on the already well-established patterns.

Persian art of this era, like the arts of many other countries, was based on religion and agriculture. The people were followers of Zoroaster, and hence believers in fire-worship. This faith, established some hundreds of years before the coming of Christ, withstood all outside religious forces, even the strong trend toward Christianity, until it was finally almost completely wiped out by Mohammedanism in the seventh century. The *fire-altar* (pyre) was therefore the favorite emblem, though the Sassanians used it less in textile design than they did the *hom* motif, the tree of life. To them this tree, originally a conventionalized date palm, represented the eternal renewal of life for all persons and things. The tree in whatever form it was presented always sprang from the earth and was aspiring toward heaven. Originally Assyrian, this motif has also been acceptable to other religious faiths—Christians, Jews and Moslems.

The circle which is the basis for the *rondel*, in and around which most Sassanian design was built, also had religious significance. It was symbolic of eternity, and its repetition was but a repetitious statement of belief in eternal life. This circular band enclosed designs that varied with the passage of time, first circles, dots and crescents, and later pictorial warriors and animals. These rondels, generally placed in neat rows both vertical and horizontal, were often connected by contiguous small circles, flat rose leaves or polygons. The arrangement of the forms inside these circular bands should be an inspiration to any modern designer, for the space was always completely and interestingly filled without any crowd-

ing. Human beings as well as animals were drawn without modelling, their flat faces and bizarre costumes resembling the royalty on playing cards. The group within the rondels was usually in *doublet* form, that is, a bold and fierce looking beast in the left half of the circle facing (*affronté*) or turning his back (*adossé*) to his counterpart in the right half. The bands which formed the rondel were occasionally filled with animals of a different kind, though many had small circular beads or an attempt at abstract design.

The Sassanians were great lovers of hunting which provided the inspiration for many patterns including wild beasts in strange postures. There was, however, always a perfect adaptation of the figure to the space. The bilateral balance within the rondel even permitted the use of birds *adossé* in the upper half of the circle while two rampant tigers clawed at each other in the lower section. By the year 600 the shooting warrior had appeared, who usually rode a galloping horse and pointed his bow and arrow at a beast cringing at his feet. Kings, as superior beings, were depicted as riding winged horses while lions and other strange animals in tortuous poses filled in the semi-circular space under the horses' feet. With the advent of this hunter-king motif, the rondel took on a new significance. To those who so believed it then enclosed the forest, represented by a central tree however meagre, and excluded all but the king and his prey.

In one well-preserved fabric of this period a combination of the *horn* motif and the shooting warrior was worked out within a rondel. The trunk of a slender tree, whose foliage filled out the upper part of the circle, separated the horses' noses as they galloped upon each other. Fierce looking lions, *vis-à-vis*, at the base of the tree occupied the lower part of the rondel. Though both the animals and the figures were highly conventionalized they had an appearance of life and vigor, and they were definitely pictorial, despite the simplified drawing.

Another favorite motif of the Sassanians and one that was true Persian in inspiration was the two-legged dragon or griffin. His real name of *hippocamp* seems most original, for it sounds so convincing that there just isn't any such animal—and there isn't. The original two-legged dragon was Babylonian, but by the time the Sassanians had discovered how completely and adequately he could fill a circular space he had developed new characteristics. Though primarily a dragon he had a dog face, two claw feet, and a peacock tail. This tail, usually decorated with a small conventional pattern, swept up over his back with a twisting curve that was delightful. The hippocamp was even carved into rock as a permanent record (*circa* 600) when that pattern was used on the robe of King Chosroes II in the rock sculpture in Takibostan.

Another motif, slightly less distinctive, was the *pine*, the cone-shaped form developed from a Syrian cypress. It was used repeatedly even in later Persian design and also in many of the Indian cottons. The palm tree from Southern Persia and the *pomegranate*, the cone-shaped fruit, later became so important in Saracenic and Gothic fabrics that their origin here should be remembered. The two-headed eagle expressed the symmetry so essential to all Persian patterns and was symbolic of force and courage, the two attributes of virtue. This bird and the lion really represent the beginning of heraldic design in art. The emblem of the Sassanian queens was used time and again, a bird of conventional form with an Oriental crescent on its breast and a necklace of three jewels hanging from its beak. Occasionally a Hellenistic pattern appeared, one that had probably been copied from an Alexandrine silk, for a floriated scroll or branching honeysuckle was not a true Persian design.

Though the ancient Persians used wool and linen chiefly, as had their Assyrian predecessors, silk was an important factor in all fine Sassanian fabrics. In the fourth century it

was at times mixed with cotton, but by the time sericulture as well as weaving was thoroughly understood only the finest and purest silk was used for ceremonial costumes. Some time later silver thread was added in embroidery to the already gorgeous robes of the kings. Damask woven of linen and silk was especially popular for the long flowing robes of the seventh century. Considering the size of the looms with which they worked, the variety of their patterns and textures was remarkable. The best effects could of course be obtained by their clever repetition of small motifs.'

All of these fabrics were as rich in color as they were in pattern, though royalty then, as later, showed a decided preference for purple. The king's robes were sometimes striped or mixed with white and then decorated with metallic embroidery. Silks were vari-colored, light yellow-green on dark green, grey and white on a rich blue ground, white and gold on red. One of the better preserved fabrics with a bold cock in a rondel was woven with red, blue and gold against a natural linen ground. Old Persian stories of that age are full of references to brilliant and beautiful colors and there are romantic allusions to garments floating softly in the breezes. But not all of their costumes were sheer if we can judge by the sculpture of the day, many of them, on the contrary, being stiff and heavy. These people were a tremendous stimulus to the growing art of weaving and their designs have valiantly withstood the test of time.

2

PERSIA UNDER MOSLEM RULE

When the Arabs following the banner of Mohammed swept over all the Near East the Sassanians were overthrown. Fortunately the native art was retained to a large degree, because the new rulers, those wandering desert people, had

no inherited art of their own. The Persian motifs and designs were so distinctive in form that it is possible to trace them in the arts of other countries despite their absorption by Islam. Byzantine style shows a Persian origin and most of the Egypto-Arabic patterns developed from the same source, though with a quite different result due to their more strict adherence to Moslem tradition. The idea of the medallion with the hunting scenes and the conventionalized birds and animals in doublets can be discovered in almost all textile designs even down to the Renaissance. That the Persian weavers did not fall in with the suggestion of Mohammed that there should be no representation of animate objects seems to have been of little moment, even to the leaders of the Moslem state.

The Caliphs of Bagdad and Damascus, who controlled the country till the middle of the ninth century, were all patrons of the arts and many of them set up a *Hotel de Tiraz* (royal workshop) in their palaces. Every Caliph felt that a large part of his superiority depended upon his gorgeous robes, so it was but natural for him to foster the agencies which supplied them to him. Damascus is one of the oldest cities in the world which still is and has always been a great weaving center. There are various references in the Old Testament to the cloths made in Damascus, and when Rome dominated the world, the silks for the Roman Consuls came from the same source. It was there that they made most of the banners and flags carried by warriors into battle, or by churchmen in ecclesiastical parades. It was also the official center for the manufacture of all robes of state and for other elaborate paraphernalia which played such an important part in their colorful and beautiful spectacles.

The *rondel* which provided the enclosing outline for the Sassanian warrior held its place until the twelfth century when the Saracenic ogival forms crowded it out. The palm tree and the cypress continued to be favorite motifs of Per-

sian design, even in their most stylized forms. The *pomegranate*, sometimes called the apple of love, had been taken over by the Mohammedans with the same ease with which they took over lands and castles. Pairs of birds and pairs of animals *affronté* or *adossé* survived the Prophet's edict because they were so highly conventionalized, though abstract forms gained in prominence. The Persian arabesques, which were developed from an antique vine decoration, did not follow the true Arabic style for their wide sweeping scrolls had a distinctive flavor of the Far East.

In the thirteenth century the conquering Mongols under Genghis Khan spread their empire to the Persian Gulf, and that enterprising spirit set himself up in Bagdad. The romantic stories of Tamerlane and his regime in Persia came in the following century. During all this period the textiles were strongly Oriental, and animals of various kinds appeared even more frequently than before. Instead of rondels or ogival forms which had given vertical line effects, there was a definite horizontal feeling. Parallel lines ran across the fabric dividing it into rows. On one line the animals or birds all faced in one direction, while on the row above and below they faced in the opposite direction. Due to the alternate placement of these small forms an oblique effect was also obtained. Flowers were always included, the smaller Persian ones in any background and larger ones as part of a pattern. With the influx of Chinese fabrics the phoenix and the dragon were used more often as well as the unicorn and the lotus and the peony. All of these definitely Oriental forms were blended with a little Arabic script and a few Persian flowers to make a thoroughly picturesque textile. Despite the rhythmic quality of the designs the drawing was freer and the symmetry not so obvious.

Cloth of gold was the background for many elaborately patterned velvets intended for royal use, and splendid brocades and damasks were as common as cotton. Magnificent

velvets were also made in adjacent sections of Asia-Minor—in Syria and Anatolia in particular. Both the velvets and the brocades were slightly different from the Persian ones, not so much in texture as in the fact that they were less artistic in design and color. Those other countries followed Islamic tradition more devoutly and therefore employed fewer figures and more foliage.

Some of the most beautiful brocades and velvets in Asia were made in *Yezd*, and their silk looms are busy even to this day. *Kashan* is another name that lingers in the memory, for it was the small province founded by the wife of Haroun-al-Raschid, that heroic contemporary of Charlemagne's. With a truly Oriental gesture that great Caliph of Bagdad sent his ambassadors to Charlemagne's court laden with priceless gifts, especially rare fabrics, part of which are still treasured in the Cathedral of Sens. Kashan had a tremendous trade in velvets, brocades and embroidered silks, which the native craftsmen had carefully built up, but which was doomed to ruin by the rival products from western machines. The one good result was that the people of Kashan turned then to the weaving of silk rugs, the beauty of which has not yet been equalled by any machine. From *Mosul* came the name muslin, though apparently cotton was never one of their major products and muslin once had a different meaning. Marco Polo found that "all those cloths of gold and silk which we call muslins are of the manufacture of Mosul." *Kirman* also achieved a place of enviable note for the weaving of fine shawls made from goats' wool, similar to those from Kashmir.

The Persians themselves thoroughly enjoyed their beautiful textiles and used them in great quantities. Damasks and brocades were made into hangings for their houses or for the interiors of their spacious tents. Velvets were ideal for the cushions piled on low couches already covered with priceless rugs. Heavy silks were draped over tables and

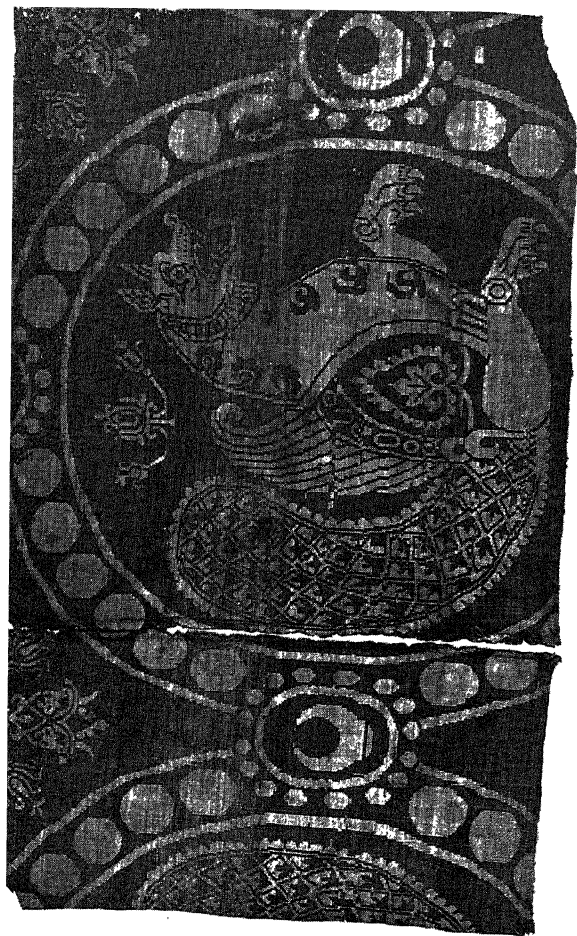


PLATE 7. A Sassanian silk damask of the sixth century. The hippocamp motif in dull gold stands out from an olive-green background.

Courtesy Victoria and Albert Museum, London.

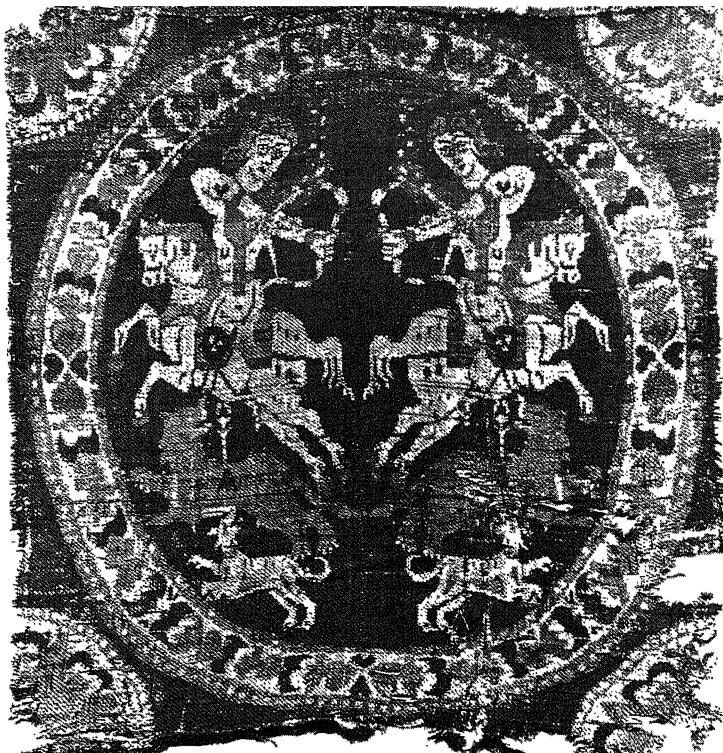


PLATE 8. The hunter-king doublet of the sixth-seventh century set in an amusing rondel. This Near-Eastern silk tissue is brilliantly colored against a red background.

Courtesy Victoria and Albert Museum, London.

chests, and the finest textures, both sheer and heavy, were made into costumes for the beautiful women and the stalwart warriors. When a rich potentate went to visit a neighboring prince his camel train carried chests full of gorgeous fabrics as presents for the court. The princely retinue, too, had to appear in their richest and rarest, for the costliness of the display helped to confirm the impression that here was one of Persia's most powerful dignitaries.

3

THE FABRICS OF THE XVI AND XVII CENTURIES

Once again Persia rose to the heights under native rule when the Safidian dynasty was set up in 1499. This return of the Persians to power was like the beginning of a renaissance with the reign of the powerful Shah Abbas (1587-1628) as its culmination. Though Persia had long been in alien hands, and barbarians at that, she had not suffered greatly for they had been so impressed by her culture that they had accepted it willingly. During the reign of Shah Abbas there was a widespread interest in all the arts and letters and the miniatures and illuminated manuscripts made at that time are a delight to the connoisseurs. It was in his day, too, that the weavers reached the apogee in silk weaving.

The grandfather of Shah Abbas was also notable, for he was a great patron of the arts with an especial interest in the Oriental tendency which kept cropping up in Persian design. To foster this and to make it more perfect he even sent artist weavers to China to learn what they could. After their return the patterns revealed almost pure Chinese motifs including the cloud, butterflies, the waving ribbon, and different kinds of flowers. It is the beguiling mixture of Oriental and Occidental ideas in the splendid fabrics of the

sixteenth and seventeenth centuries which makes them so appealing to us.

The expert weavers were turning out more magnificent and costly fabrics than ever before, and Persia excelled with her silk brocades, velvets and cloths of gold and silver. Silks of such lustrous texture, perfect rhythmic quality of design, and vibrant color were sought eagerly by the wealthy princes of neighboring countries, and the fame of the Persian weavers spread once more as it had under Sassanian rule. The great dignitaries wore heavy silk robes patterned with many figures and enriched with embroidery. Sheer fabrics, also handsomely embroidered, were used by the ladies for their costumes, their veils, and their shawls.

It was not only the wealthy people, however, who were clad in colorful garments for even the less rich had their picturesque patterns though rendered in poorer stuffs. In the early days the Persians had used quantities of wool and linen, but since they had discovered the possibilities of cotton it had superseded wool to a large extent with certain classes. Silk was available to all for they had learned how to mix it with linen or cotton. Then, if ever, was an age of splendor in a land of romance.

Persia's religion was officially still that of Islam, but they were free thinkers as they had always been and they did not worry over the Prophet's prohibitions. The fabrics of the time were fairly alive with people and birds and animals all blended with a luxuriant floral background. Some patterns appeared to be descriptive of the most fantastic of the tales of the Thousand and One Nights, while others were pictorial poems. The old Iranian legends or romantic stories of fabulous kings and their courts were prime favorites for they permitted a great deal of animation within a set pattern. Despite this mixture of figures and animals and flowers there was a formality of arrangement which marked it as Persian.

The cypress tree or *pine* continued to be used repeatedly for the boldness of the outline and the contrast of its dark color against the lighter tones of the background always made it outstanding. The *hom* motif was still significant of eternal renaissance even when the tree itself degenerated to a cypress placed between two peacocks *affronté*. The lion, leopard, gazelle, hare and griffin often romped through a landscape of extraordinary composition. A tall cypress topped a mountain while a peach blossom looked larger than a lion. Hyacinth, tulip, iris and eglantine were the flowers they used either in *semé* patterns or as part of a large design. Parrots and butterflies, peacocks and nightingales, and even eagles soared peacefully through those Gardens of Eden. A phoenix attacking a fleeing rabbit was a definite Chinese motif though rendered in a true Persian manner. Many of the charming floral motifs for which Persia is so justly famous can now be definitely traced to their Chinese origin.

This welter of pattern placed in perfect distribution of space was rendered in almost as great a variety of colors. Green, red and blue stood out against a gold and silver-gilt background, or green and white against a subtle yellow-green. Multi-colored patterns blended with tomato-red satin or a figured design in dull shades of gold and tan told the story of a favorite romance against a flat black background. A crimson satin ground could be powdered with gold crescents in groups of three, enclosing three balls, or interchanged with the floral variant of the Chinese cloud motif all rendered in blue. The most active figures were often outlined in a contrasting tone to set them off against a more delicate background. The figures, animals and birds of a beautiful sixteenth century brocade were in all the mellow tones of blue, green and red, each one outlined with pink against the yellow satin background. A gold brocade of the following century showed the warring birds and beasts embroidered in pastel tones.

Cotton had come into its own in Persia and during the seventeenth century the natives usually wore an outer garment of cotton printed in a variety of colors over a cotton undergarment that was sometimes quilted. They even used cotton for some of their prayer-mats, one example showing a cypress as the tree of life in the *mihrab*, or prayer-niche. Many of the so-called Persian prints came from the Coromandel coast and many from Central India. Their contemporaries evidently credited the Persians with designing them, if not manufacturing them, for *persees* was a name in common use. The *perse glacée* was a kind of glazed chintz with the conventional tree or cone motif surrounded by intricately drawn arabesques. Usually it was a large hanging, the whole panel being polished by hand with a stone which produced a fine glaze without any sizing or heat. The careful quality of the workmanship indicates that the labor of making one of these cloths must have employed all the hands of a whole family over a long period.

An interesting reference to the cotton garments then in vogue can be found in the "Relation d'un Voyage au Levant par Jean de Thevenot 1633-67." He says that the

Persians cover themselves with a quilted coverlet set with oilet-holes, and over it a cloth painted with flowers and other trifles: these they call Indian cloths because most of them are made in the Indies; nevertheless a great many are also made in Persia, and the flowers and other paints are stamped upon them with a mould besmeared with colors.

The French traveler Chardin wrote in his "Voyage en Perse" (1686) that

They know also how to paint cloth, but not so well as in the Indies. A work in which they are eminently successful is to print with gold and silver on cloth, taffetas and satin. They do it so well

one might describe it as gold or silver embroidery. They print with gum water.

The later fabrics of Persia were less characterful. Small motifs prevailed and there was a strange lack of originality in their composition. A patchwork effect finally resulted, a picture or a story within each square or oblong. Those blocks were either quilted on the edge or occasionally outlined with a couched thread of gold or silver. They had the same feeling for formality and unity which is apparent in all Persian design but there was less artistry, even in the more complex patterns.

CHAPTER VII

Coptic and Peruvian Textiles

1

THE WEAVING OF THE COPTS

CHRISTIANITY had worked its way into Egypt by the end of the first century and despite the fact that the followers of this little known religion were subjected to horrible persecutions they not only survived but increased in numbers. The native Egyptians who carried the banners of this new leader were called Copts, though that name was not applied to them until after the Mohammedan invasion of the seventh century. The word itself is the Arabic version of a Greek phrase which referred to the ancient Egyptian language. It is these Copts, at their best from the third to the seventh century, who gave us our first real Christian art, and who presented us with something new in the development of textiles.

Coptic art does not begin with the introduction of Christianity, however, for in the first three centuries the designers still pursued the paths of pure classicism. Then came a definite change which can be marked by the division of the Roman Empire in 330 A.D. Egypt, you will remember, was still a province of that vast empire and after the readjustment owed her allegiance to the capital of the east, Byzantium. That famous city, renamed Constantinople in honor

of the first Christian emperor, has always been a melting pot, for it is the natural gateway between East and West. The art of the city, and the art of even the far-away provinces under her jurisdiction has always been composite, no matter whether a Christian or a Moslem was the head of the state. The Byzantine style has rightly been called the Christian art of the East, and perhaps we might call the Coptic style the Christian art built on a pagan foundation.

Egypt had seen different religions come and go, as she had seen conquerors from different lands come in on the crest of the wave and soon fade into obscurity. And when the early Christians professed their new faith it was just one more added to the melange. But that time it was different because Christianity became the official religion of Constantinople and in Constantinople lay the controlling power. The Christians, however, were well established in Egypt by the time that religion reached them officially from the new capital. Alexandria, the leading city of Egypt, situated on the Mediterranean coast, was the stronghold of Hellenistic life and art and hence had no time and little inclination to delve into Christianity. The Greeks had flocked there in great numbers and had built their own temples to their own gods. They had also been favorably impressed with the power of Isis and Osiris, for they had taken over those popular Egyptian deities and built beautiful shrines for them as well. Other localities still clung to their old faiths though the Christians were scattered throughout the land. It is on this pagan foundation which also included all the lore and beliefs of ancient Egypt that the first Christian art was built.

There are two phases to the style we call Coptic; the first when the designers were still under the influence of Graeco-Roman art; the second and more modern is rightly termed Coptic for it was the Christian art in Egypt. As is true with any style it is impossible to state that it began in a certain

year. The growth of a style is like that of a flower, for no one can say at exactly what moment it is germinated. They may be able to judge quite well when it has reached perfection, but then again they cannot determine precisely when it ceases to show any signs of life. So, obviously, no one can make a definite statement as to when the Coptic style began or how long it lasted. It is enough to know that these Coptic artists, who worked for a succession of rulers—pagan, Christian and finally Mohammedan—did create something original, or at least something distinctive.

The ancient habit of mummifying the dead had ceased with the advent of Christianity when such practices were frowned on. But the simple burial grounds which they located just back of the fertile Nile valley were in such arid land that their tombs have been kindly preserved through the centuries. Recent explorations of them have brought to light so many incidents of Coptic life that it is possible to reconstruct a fairly accurate picture of their activities. Instead of wrapping the dead in yards and yards of fine linen they were buried in their every day clothes sometimes even those that were threadbare or patched. One or two tunics, an outer mantle or cloak-like toga, a cap, and shoes or sandals completed the list of essentials. Occasionally the objects that had been used in their daily lives were also included, a doll with a child, a mirror or a spindle with a woman, or a weaver's comb with an artisan. The royal tombs being more spacious held greater treasures and from them as well as from the graves of the common people have come those textiles which we prize so highly today.

The Copts were the natural heirs to the old Egyptian arts and though they had a working knowledge of all the ancient handicrafts they did not follow the methods of weaving practised by their forefathers. Rather they developed a new technique from the old. Their outstanding contribution to textile history is the art of tapestry weaving with polychrome

wool and undyed linen which they brought to perfection. They interwove into a natural linen background bright bits of wool to make medallions or bands which displayed crude but pictorial patterns.

The more important of these decorations were woven in as definite parts of the tunic which was the modish dress of the fourth century. Some few were woven separately and then applied, but the colors and patterns were the same as those that were interwoven. The tunic inspired by Rome, and quite unlike the softly draped styles of ancient Greece, was stiff and straight, slightly awkward looking. Perhaps its very ungainly and rectangular appearance led to the need for added ornamentation. Longitudinal bands hung over the breasts, and four medallions, square, rectangular, circular or star-shaped, were placed at the shoulders and knees, and a narrow border usually finished the lower edge of the hem. It is frequently only these decorative bits of wool tapestry, which indicated social distinctions as well, which have been preserved. But it is from these fragments that we have learned the Coptic technique of weaving as well as the character of their designs.

The looms which the Copts set up were threaded with linen warp threads sufficient for the width of the tunic they were about to weave. These threads were apparently held down by individual weights rather than all fastened to a roller as had been the practise. They proceeded with the weaving of the tunic until they reached a part where a bit of decoration was required. Then they used heavy wool for the weft threads instead of linen and forced them so tightly into place that the linen warp threads were completely concealed. These woolen threads extended only the width of the pattern and were not carried across the entire width of the garment. The plain linen weaving was then continued until another place was reached where the ornamental wool pattern was inserted. The effect of embroidery was thus

achieved and except for the simple quality of the materials the result was not unlike some of the rich silken brocades of the eighteenth century. Luther Hooper suggests that the term "inlaid weaving" be applied to this type of work wherein the threads that form the patterned medallions are not carried across the full width of the cloth. The similarity of this method to that employed by the medieval weavers of pictorial tapestries in France and Flanders is apparent. This same method was used also by primitive people of other countries as will be pointed out.

All of their designs showed a highly developed sense of decoration whether they were made under the domination of Hellenistic art or were inspired by Christianity. Even their very earliest patterns which were a bit like those of an untutored people groping toward artistic expression were vigorous and colorful. Created by untrained hands the primitive drawing and pure color were quite as naïvely charming as the peasant embroideries of modern Europe. Perhaps that was because they were made to satisfy their own desires and not to fulfill any commercial obligations. There is no doubt that they had inherited sound artistic impulses for every one of the patterns followed the fundamental principle of filling a given space without overcrowding. The corners of their bandings were particularly noteworthy in that respect.

The Hellenistic background provided them with definite clean-cut patterns, all following the Greek tradition. Wave-like borders, bands of discs, fretwork and the small all-over lozenge designs were all of classical derivation. The guilloche, that interlacing band which forms circles, they acquired from Rome not Greece, but its circular repetition was appealing to them. Occasionally the centers of each small circle were filled with a four-petaled flower, and there are those who contend that that was the birth of the rondel. The simple, early motifs, no matter how decorative, were all dull and somber, usually woven in one color only, and that purple

most frequently. They used dark blue and brown, too, and the central figure was nearly always outlined in white. It was not until the fifth century that the polychromatic effects began, which are better known perhaps than the earlier patterns.

With the introduction of the true Coptic art there came the breaking away from tradition, from Graeco-Roman ideas—the change from pagan to Christian. Symbols and figures of the new faith were dominant after the fourth century, though pagan forms kept creeping in despite the Christianized concepts of the weavers. Considering their limitations they achieved remarkable variety. The square or rectangle usually contained a central motif that was surrounded by a vine or floral border. The eight-pointed star, often with a long tail that gave added decoration to the front of the tunic, could be filled with conventional designs. The flowers were quite limited in variety as were the animals. A few birds and a few fish were interwoven now and again, and the hare with long ears seems to have been a favorite.

From Alexandria they borrowed all the human figures, but very soon classical gods and goddesses gave way to saints, each crowned with a flat disc-like nimbus. Very primitive figures in remarkable poses were centered in the oval or square medallions and horsemen not unlike the early Sassanian warriors were housed within the rondel. A few of the designs were more abstract in character, quite like those used for the handsome rugs then being woven in the East. Others were filled with symbolism, no matter what its interpretation. There was, for instance, the fish which might be a representation of Christ, or if you were a pagan, it suggested the old Greek or Roman symbol for water—and fruitfulness.

Soon the designs began to grow more picturesque and fables from Olympus were quite as popular subjects as the stories from the Bible. They even combined the two if the resultant design was sufficiently decorative. They were con-

stantly striving to render the figures in a more naturalistic manner, and they reproduced folds of costume, flowing hair, waving ribbons and minor decorations with precision. Despite the great activity of a warrior fighting a lion or a bull the primitive quality of the drawing marked it as Coptic. The larger designs were divided by architectural details into smaller scenes which might be quite unrelated. Bouquets of flowers or baskets of fruits were woven in with colors as near to reality as possible. Sometimes birds were included that pecked at the fruit in proof of its natural appearance. But with all this realism they continued to use and to bring nearer to perfection their familiar geometric figures. Perhaps they are after all the most lasting contribution of Coptic art.

These wool tapestries had been carried to Persia and to Byzantium where they met with a certain amount of favor. But such simple cloth and infrequent designs caused very little sensation amid the decorative style which was then in vogue. The handsome silks from the emperors' courts made a much more definite impression on the Copts. Though the silks from the east had always been known in Egypt, they had not been used to any great extent until the establishment of the court at Byzantium. The emperors, realizing that there were expert weavers in Egypt, commanded rich hangings for imperial use. All of these things gradually diverted the Copts from their simple tapestry weaves. But before they gave them up they conceived new patterns which they thought were more in keeping with the prevailing mode.

From picturesqueness they turned to grandeur. What had been simple architectural divisions of spaces became monumental. Arcades separated repeats for borders and handsome columns divided larger and more impressive motifs into important sections. Against this architectural background they placed a confused mixture of design. There were Sassanian warriors and hunter kings, there were doublets of animals

or birds in Byzantine rondels, there were Romanesque details, and Alexandrine figures. The circus, the hunt, allegories from the Bible, or tales from mythology all became important. The children that they also included were charming, though quite like those of Rome or Pompeii. Obviously with such complex designs larger spaces were required, so more of the tunic was covered with pattern, and silk gradually replaced linen and wool with those who could afford it.

These later Coptic tapestries were generally polychromatic, which suggests Byzantine influence. Remembering how the early Egyptians loved color it is easily understood why these people, their lineal descendants, enjoyed using it in such profusion. They employed much the same distribution of color that might be found in an Oriental rug, being particularly fond of red and blue against a delicate apple green. Bright tones of red, green and yellow were all included in one medallion with the more somber hues which had been used in the earlier designs. Some of them contained as many different color tones as a piece of needlework. Their method of tapestry weaving was certainly the only type of weave adaptable to the use of so many colors in such restricted areas.

Of the many remnants available for study the smaller circles and rectangles enclosing active figures are most often seen. The eight-pointed star, too, with its carefully spaced geometric motifs is typical of true Coptic weaving. Crosses which were usually indicative of a Christian weaver were frequently combined with pagan-like animals, showing the two forces still at work. One square hanging of the fifth century had a central medallion in which appeared a large cross supported by two peacocks. No doubt that had developed from the old *hom* motif, the cross replacing the tree of life as a symbol of salvation, and the peacocks still representative of immortality. Another bit of wool work that has been dated in the same century was mostly yellow and blue.

Rows of arcades made separate compartments in which were placed highly stylized figures of dancers, and in the neighboring spaces other figures stiffly perched on lions. Octagons were filled with hunting scenes or with birds and animals which were intended to be realistic. Bible stories carried a running inscription in Greek, or Coptic lettering was used to indicate the name of a pagan demi-god.

One fragment which has been identified as early seventh century had a standing bird framed by a rondel. On its breast it bore a crescent and in its beak the necklace of three jewels which was the emblem of the Sassanian queens. This whole pattern lifted from Persia was rendered in pink and dull blue. Though many of the designs were Persian in origin the figures were clumsier and less spirited and very few of them showed any background such as could always be found in the contemporary Persian silks. In the seventh century also appeared the diamond and rhomboid patterns which were the fore-runners of the Mohammedan era. The rise of the Arabs to power brought many changes in textile design, and perhaps nowhere were they more apparent than in Egypt. Mohammed's flight to Medina in 622 (see Chapter IX) all but changed the map of the world, for soon after that his great conquests began and Egypt fell under Moslem control in 641. Coptic art grew decadent and even the Hellenistic style of Alexandria did not long survive. The simple severity of the early Christian art was entirely lost for a new star was in the ascendancy.

Though the famous Coptic tapestries were wool woven into linen or cotton, silk had become equally important after the luxury of Byzantium had impressed itself on Egypt. The early Copts used it only as embroidery or appliqué, and one fabric made in Panopolis was obviously so woven that it could be cut into squares, bands and rondels for trimming plain tunics. Though no Coptic silk was probably woven prior to 300 there are various examples extant from the two

following centuries. The raw silk from which these fabrics were made was imported either directly from China or through the Persian intermediaries. Alexandria took the lead in silk weaving as so many master craftsmen lived there. Numbers of them had migrated from Syria even before the Christian era. Pliny recorded the fact that Alexandrian artisans were experts in the art of weaving when silk was first introduced into Rome, and there is adequate proof that some two hundred years after the Mohammedan conquest she was still supplying Constantinople with many of the richest silks for use in the church.

One of the earliest known Coptic fabrics was made with long upstanding loops of wool which created an effect not unlike a fine hooked rug. This type of weaving seems to have preceded the true Coptic, and it is assumed that the long loops were originally designed to provide additional warmth. A Coptic linen velvet preserved in one of our museums is believed to be the earliest example of pile fabric that survives. These early velvets were made with a heavy cotton or linen backing, the long uncut loops standing up in clearly defined rows with the simple canvas showing in between. The loops of linen were always left long and shaggy while those of wool were shorter and thicker, and of course softer.

Certain cities stand out importantly in this period, and it is from these centers of culture, some of them long since buried by the drifting sands of the desert that we derive most of our knowledge of Coptic customs and textiles. *Panopolis*, now called Akhmîm, was a great weaving center of the fourth, fifth and sixth centuries. Lying far up the Nile valley, some three hundred and fifty miles above Cairo, it was famed from the ancient days for its linen. Having already established a reputation for fine weaving, as soon as silk became so important in the sixth century the expert weavers turned readily to the new fibre. They made such great progress that they even developed an individual style. Their

silks were usually two-toned, light on dark, that is white, yellow or some other pale hue used for the pattern against a dark background of purple, green, or red.

The Roman tradition held on there in contrast to the pure Hellenistic trend in Alexandria. The guilloche border and the knot pattern in the corners, reminiscent of Roman mosaics, were employed again and again. The fret, Greek-key and wave-like meander were used for borders and small horn-shaped leaves appeared in almost all the patterns. The rectangular shapes and foliated scrolls in which they specialized were often copied by the contemporary weavers of Persia and Syria. One interesting bit of weaving from Panopolis is a fragment of a *clavus*, a shoulder band, in the upper panel of which a warrior and beast are fighting. The lower panel contains two peaceful-looking birds confronting each other and quite surrounded by unusual plant-forms. The whole pattern is woven in tan against a rich red-brown background.

Antinoë, only about half so far from the fertile Nile delta, was the extensive and pleasure-loving city founded in the second century by the Emperor Hadrian. Due to the large Greek population, there are to be found among the designs from this city many evidences of the classical tradition. During the third and fourth centuries the heart-shaped device was typical and later the small lozenge patterns which covered the entire garment. Circles with stars, crosses, even the hooked swastika, crescents, palmettes, four-leafed rosettes and clover and vine leaves were all employed. Scrolls came a bit later with symmetrically placed animals or human heads with the faces always in profile. A strong Sassanian flavor appeared in many of these designs and the Greek dolphin and lion were frequently interwoven with the Persian zebra. The richness and variety of the silks made in that city was astounding.

Alexandria retained her place as a cultural center through

many vicissitudes. With all her shrines to picturesque but foreign deities it is not strange to find among her motifs less Christian and more pagan influence. They made many more silks than the other cities and in the fifth century a *gynazeum* was built there especially for the dyeing and weaving of silks for the Byzantine court. The *Nereid* textile, long thought to be the earliest silk fabric, was made in Alexandria. This cloth patterned with broken circles enclosing human figures now forms part of the important textile collection in the Kunstgewerbe Museum in Berlin. While it is difficult to ascribe most of these early patterns and fabrics to their correct source, certain Alexandrine silks were distinctive. A broad circle enclosing a flower, usually a four-petaled one, was typical. For the most part Alexandrine design has always been one of extremes, motifs that were exaggerated in size, compositions that were amusing, even coarse, and colors that were strong and individual. They were rich and vivid in contrast to the fabrics then in favor in Byzantium. Cherry red was the most popular background with the pattern of white, yellow, green, brown and red all outlined with black. Blue and white or two shades of blue against red and gold were also used repeatedly.

2

TEXTILES OF PERU

One of the strange coincidences of textile history is that a certain type of weaving which seemed distinctive could have been evolved at the same time in two or more places which were widely separated geographically. Yet the Coptic tapestry weaving process which seemed unique was also developed by native weavers in Borneo, China and Peru. What has been proven true in other instances may apply here, namely that when primitive designers, untouched by outside

influence, work toward the same end, under the same technical difficulties, they usually reach the same goal, each unknown to the other. There is also the school of thought that holds the belief that these countries were not at one time unknown to each other. Our interest in the textiles of ancient Peru has been stimulated these last few years by the treasures that explorers have brought to light. A study of this early civilization, both Inca and pre-Inca, has revealed many unusual things, and perhaps nothing more romantic than the likeness of their tapestry weaving to that of the ancient Copts.

Very little has yet been proven regarding the people who lived and worked in this land in the thousands of years before the invasion of the Incas. Some authorities believe that they had a far more advanced civilization in the ages corresponding to our pre-Christian era than they had under Inca rule. One thing that does seem quite authentic is the fact that there have always been two groups of people who were constantly at war with each other, perhaps not unlike the Babylonians and Assyrians. One group dwelt in the highlands and, as has so often been true, the rigors of their geographical location made them hardier and therefore sponsors of a stronger and more ceremonious style of art. The people of the lowlands were realists, for life seemed easier to them and the gods less difficult to placate. Manco Capac, who founded the Inca Empire about 1000 A.D., conquered first the mountain people and somewhat later those along the coast. He and his followers were sun-worshippers and he and his wife—who is credited with the introduction of weaving—declared themselves to be children of the sun. While there are no definite records as to exactly what he found among these tribes it is assumed that all of them had progressed far beyond primitive art.

Even after the establishment of the Inca Empire there were two distinct art developments. In the highlands greater



PLATE 9. A Persian brocade of the seventeenth century. The familiar story of the captive maid is told in various tones of yellow on a red background.

Courtesy Museum of Fine Arts, Boston.

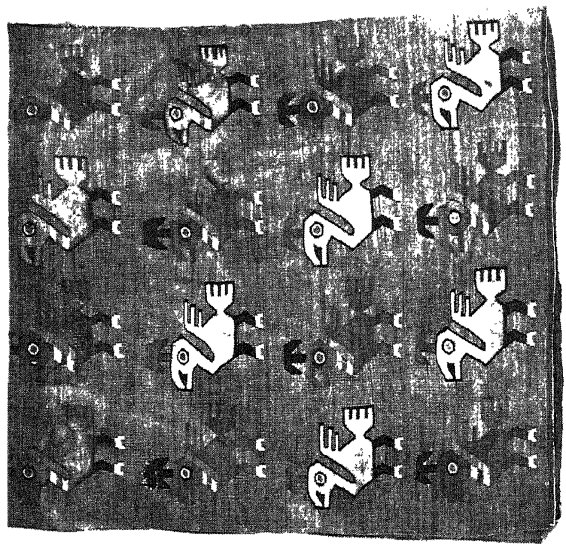
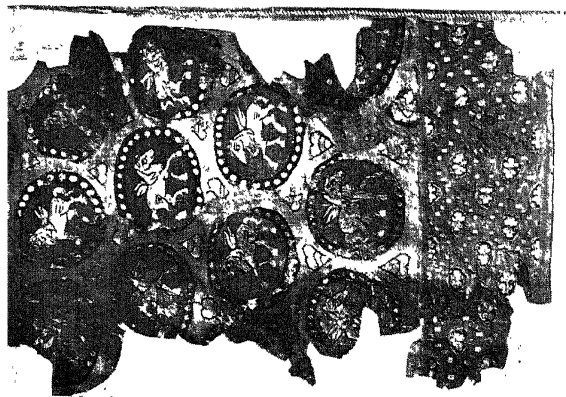


PLATE 10. *Left.* A splendid Coptic tapestry of the sixth-seventh century showing the Sassanian influence. Against a blue-green background the blue or yellow horses have wings and manes of gold. Excavated at Antinoë.

Courtesy Musée Historique des Tissus, Lyon.

Right. An amusing Peruvian tapestry of the same character as the Coptic. From the pre-Inca period—tenth to eleventh century—the vari-colored birds are woven against a brown background.

Courtesy Metropolitan Museum of Art, N.Y.

conventionality and vibrant and subdued colors were still favored, while the coastal tribes leaned to more vivid and realistic coloring and more naturalistic ornament. When Pizarro, the leader of the Spanish conquest, finally conquered these people in 1531 he was amazed to find that they were even more advanced in all the arts than were the people of contemporary Spain.

Most of the treasures of Peru, Inca and pre-Inca, have been taken from their tombs. They had a dry soil and a dry air which have been quite as kind to their ancient tombs as similar benefices have been in Egypt. They, too, like the Egyptians, buried personal belongings in the tombs with their mummies. It is largely from these burial grounds that our students are collecting information as to these people and their mode of living and their manner of working.

Though the extant tapestries from the Inca tombs are later than those of the Copts there is a similarity that is remarkable. They, too, interwove bright bits of decoration wherever needed to adorn their tunics. These people, so cut off from the rest of the world, were familiar with practically all the different processes of weaving. In addition to making pictorial tapestries they produced a pile fabric not unlike that of a knotted Persian rug. In their tombs examples have been found of embroidery, tinsel, leno, brocades like those which now require a very modern Jacquard loom, double cloths and even hand-knotted net. From pictorial records we know that the weaving of fine cloth on well set-up looms was practised as early as the third century. Various weaving utensils including wooden spindles and complicated looms have been found in their tombs, all silent witnesses to their versatility.

They excelled in fine cotton weaving, specializing in woven patterns in contrast to the painted and printed cottons of India. They were quite familiar, however, with both processes of printing and knew tie-and-dye and batik as well.

Both blocks and small terra-cotta rollers for printing have been found in their tombs. These small rollers were used for making the narrow bands with which they sometimes decorated their tunics. They were even expert at producing a high glaze quite as good as that of the Persians or Indians.

Cotton and wool were the chief fibres, one authority on cotton believing that the most ancient cotton in the world was that grown in Peru. The wool they used came from the llama and the alpaca, a fibre which is particularly soft and silky. Certain shawl-like garments made of cotton were embroidered with vicuna wool. Silk and linen seem to have been unknown, but the fabrics made were just as fine and sheer as any of those loomed in ancient Egypt.

Their patterns were largely symbolic. The bird head was the chief motif and some of the conventionalized patterns seem to fit in with the old South American stories about "bird-men." Fish were almost as important and after them the cat, llama and monkey. The puma god, half man and half beast, was reproduced frequently as were various types of highly stylized human beings. Flowers were never included so waves and scrolls filled up the background instead of florescent forms. There were frequent examples of a kind of swastika and other geometric figures combined in a fret-like border. Some of these designs are similar to those of our American Indians and were rendered in much the same flat style. It is to be noted, however, that any of their representations of living things was always full of life and movement, and never static.

Gay colors blended harmoniously were the favorites for the more simple child-like designs. Red predominated with yellow a close second, though brown, purple, blue and green are found in later fabrics. Brown and white, or a bricky-red, gold and white made patterns of sharp contrasts. Most of these thousand-year-old colors were obtained by vegetable dyes and then fixed with mordants. The development of

sources of dye and the blending of hues as found in the fabrics of the East was the result of long experience and the exchange of ideas between countries. It was built up little by little by first one and then another. But Peru, apparently lacking contact with the outside world, travelled the same paths and reached the same end quite as successfully. A highly cultured race that developed in a country seemingly cut off from the rest of the world presents an enigma that many are trying to solve.

CHAPTER VIII

Byzantine Patterns in Textiles

1

BYZANTIUM TO THE TWELFTH CENTURY

THE spring of the year 330 marked the beginning of a new epoch for that is the year that Constantine dedicated his new capital on the shores of the Bosphorus. As Rome was the stronghold of paganism, no doubt he was wise to change the seat of the government when he changed his religion, and the new faith certainly merited a fresh start. For the sake of political dignity the city was called New Rome, but at the same time it was christened Constantinople in honor of the emperor. Artistic impulses from various sources were soon all gathered together in the new city to form the composite style generally termed Byzantine. But Byzantine does not refer alone to the artistic endeavors within the city or within the Christian empire, for it included similar work done in adjacent countries under the dominating influence of the great capital. Greece, Syria, Mesopotamia, Persia, Palestine, Egypt, and all the smaller countries that bordered the eastern Mediterranean were contained in the broader meaning of the word. That there were variations due to differing temperaments is evident, for such a large and diversified area could not bring forth absolutely uniform ideas. But under-

lying each diversification can be found the spirit which united them all.

Though the Byzantine style was founded on the art of Rome it turned for fresh stimulation to the artistic conceptions of the Greek and Oriental. The influence of this great movement in all fields of art is well known. Architecturally tremendous strides were made and the trace of Byzantine spirit is to be found in various parts of Europe as well as in the eastern Mediterranean. The term Romanesque may sound more familiar, for the two were synonymous architecturally speaking. There was a real difference though in the fact that the true Romanesque ornament was far more sculpturesque and therefore more pleasing to the Arabs who claimed it as their own. From the time that Constantinople was consecrated as the eastern capital of the Christianized Roman Empire, through the Mohammedan conquest, up to the thirteenth century when it was sacked by the Crusaders, this city stood alone, one of the most far-reaching forces in the world of art. While Persia was leaning farther toward Orientalism Byzantine art was spreading all over Europe.

When the new capital was in its infancy the fabrics were in the main imported from Egypt, Syria and Persia. It was quite simple to obtain even the most luxurious stuffs, for Constantinople has always had a strategic situation as regards eastern trade. This city, accessible by land or by sea, became the acknowledged gateway to Europe from the East. The intermediaries from Persia, or the Oriental traders from the Far East, provided they escaped the barbarians who seized many a load of rich silks, were always sure of selling their wares in the wealthy capital of the Christians. The emperors had magnificent courts that dimmed the glories of Rome, and the church had at the same time grown extravagant. The opulence of the silks from Persia appealed particularly to the emperors' sense of luxury. Alexandria, too, was busy

turning out specially designed materials for the Byzantine court, and for the church, even after the glorious days of the empire had faded into remembrance.

The first fabrics that were woven in Constantinople were undoubtedly of linen and wool, and some perhaps of cotton. Though the court was dressed in expensive silks the great mass of the people wore simple clothes which were rather heavy and bulky. Coptic tunics came into fashion at one time and were almost as popular as they were in Egypt. Those linen garments with their tapestry woven saints and Biblical scenes were the occasion for a severe scolding from a fourth century bishop. He contended that his contemporaries in the church were spending their money unwisely in buying stuffs covered with pictures of such great variety, even lions and leopards and scenes of the hunt. He found it still more condemnatory that the Holy Scriptures were thus depicted and accused them of "carrying the Gospel on their robes instead of in their hearts." It is assumed that very little silk was actually woven in Byzantium prior to Justinian for it was only after his introduction of sericulture that silk weaving became important.

The Emperor Justinian (527-565) is a significant figure in many ways. He built the magnificent Santa Sophia, the Christian church now disguised as a mosque, which is said to be the finest example extant of Byzantine architecture. The elegant altar-hangings, by the way, are woven and not embroidered as many people believe. His was the idea to import silkworms and the complete knowledge of sericulture from China so that he and his court might have more resplendent robes. Looms were installed in the women's part of the imperial palace (gynazeum) and a real monopoly was created in the fabrication of purple silks and gold borders intended for royal use only. The story of that well-regulated business is but one of the many interesting industrial facts recorded in the renowned Justinian Code. The emperor en-

couraged all kinds of productive work and did a great deal for the advancement of agriculture as well.

The cultivation of silkworms served as a tremendous stimulus to the whole industry, but the silk from which most of the rare fabrics were made they continued to import from the East. Nevertheless it was not long until the Byzantine weavers were exporting their own lustrous silks to other rich courts, even those of the Near East. Weavers migrated there from the various near-by countries and Constantinople stepped up into the first rank of weaving centers, a place she held from the sixth century until Palermo superseded her some six hundred years later. The Byzantine silks which were not woven in the capital itself were made in Corinth or Thebes or Athens, though none of these cities attained the renown of Constantinople.

Though the textiles of the early Byzantine style showed the background of Graeco-Roman classicism there was an equally strong flavor of Christianity, for Byzantine art is essentially Christian. Certain religious symbols were repeatedly made use of—the lily, the emblem of the Virgin and purity, the serpent symbolic of the Fall, and the fish denoting the spirit of Christ. Both Greek and Latin crosses were used as ornaments, and when there were circles on the four arms of the cross, they represented the Four Evangelists. Eagles, often with spread wings, were favored for church vestments, especially when fabricated with red silk and gold. The legends of Mary were woven into lighter silks, while more elaborate Biblical stories covered large hangings. It had been a custom to decorate some of the Roman vestments with a round purple patch. To this the Byzantine weavers added a gold cross, and as time went on and designs became more intricate they increased the number of those purple rondels. Among the mosaics in the Baptistry in St. Mark's in Venice there is the figure of a priest with a handsome robe completely covered with purple rondels enclosing gold

crosses. The original robe had without doubt been made in Constantinople. As very few of these early fabrics have been preserved, the mosaics in the churches and palaces have proven a splendid source of information. Those textiles that are still in existence have long lain hidden in some church treasury or have been buried in the tombs of dignitaries. And for those few and rare specimens we can render thanks to the imperial gesture of sending impressive gifts of fabrics to regal or ecclesiastical contemporaries.

Byzantine ornament was both esthetic and symbolic, and when worked out in the rich textures of brocades, damasks and velvets, the result was magnificent. The treatment of the pattern was always formal, always symmetrical within the design itself and in its repetition. The circular band or rondel was the dominant form. In the earlier fabrics they were always placed contiguous to each other and arranged in rows both horizontally and vertically, almost like those of the Sassanians. Later came the interlacing rondels, or wide bands broken by smaller circles which connected one large rondel to another. The wedge-shaped spaces between were filled with similar patterns or with abstract forms of Moslem extraction.

Tiring of all the Christian symbols the weavers sought new ideas and, stimulated by the beautiful silks from Persia, they conceived the many animals and birds, the more fantastic the better, which to many are the hall-mark of the Byzantine style in fabrics. They made the nature motifs even more picturesque and they stylized the birds and animals that were displayed within the encircling rondels. The designers worked always to achieve a symmetrical decorative effect combined with rich coloration. The weavers as well as their patrons liked the familiar doublet with its bilateral composition. Some of the fine Byzantine silks are so strongly Persian in character that it is at times difficult to determine exactly where certain pieces have been woven. The design-

ers also had the Alexandrine silks for inspiration and sometimes they copied them without even attempting to change the pattern. Wild beasts, hunters, curiously conceived birds were all woven together in one tightly knit pattern. The sacred tree was often indicated in the center as a dividing line, one that looks much like a cactus appearing in the early seventh century.

From the ninth to the twelfth century, that golden age for Byzantine silks, the animal motifs were used exclusively, especially griffins, dogs, unicorns, lions, tigers, leopards, winged horses and elephants. The latter were particularly amusing for they had a static quality and a thinness of legs and body which made them quite unlike their fat, jolly Oriental prototype. Peacocks, wild ducks and evil-looking birds of unknown origin all consorted together to perfect a pattern. Geometrical forms or rosettes often filled in the wedges between the rondels though the scroll and slender foliations were more characteristic. Classical ornaments, or sometimes just bead-like discs, were repeated within the circular band of the rondel. The vine and other plant forms were also important as part of an enclosing framework. One very often finds the classical acanthus now grown slender and with acutely pointed leaves. Warriors and huntsmen were always active and circus combats and races were full of movement. The Roman chariot race was interpreted in the famous *Quadriga* motif, four horses abreast galloping right out of the rondel. One famous textile made in the sixth century had a wild-eyed warrior driving four horses in strange non-moving positions. Yet there was the effect of action, despite their apparent inability to move. The encircling rondel was filled with a small heart-shaped device.

By the eleventh century the circles had become slightly elongated and later acquired a point above and below. From this beginning developed the ogival frames and bands, still enclosing doublets or later symmetrical floral forms, which

are the backbone of all Saracenic designs. There was a strong vertical feeling to these patterns which was emphasized by the serpentine lines converging to form the pointed ovals.

The coloring of these luxurious silks was a great part of their beauty. The imperial purple was, of course, used only by the court, but the rich reds and violets and blues designed for lesser people were just as elegant. A fabric which the importer called "imperial" when it was brought into England in 1178 was undoubtedly woven in Constantinople. Its name may have derived from the imperial purple hue or from the fact that it was woven in the imperial city.

The designers employed very few of the subtle color harmonies found in Oriental fabrics, nor yet the gay clear hues that were such favorites in Alexandria. The general effect was dark, almost somber, with little reliance on sparkling high-lights except gold. The many tones of red from scarlet to the deep purply-red were truly magnificent. Some patterns also included dark green, brown and black. The lighter tones were most often deep yellow or white or yellow-green. Against a dark blue background yellow rondels were combined with grey, and a dash of red acted as a high-light in the central motif. Violet was a great favorite in the twelfth century, especially in rendering a Romanesque pattern of quatrefoils or other architectural forms taken from window ornamentation. One well-preserved damask displayed blue doves *affronté* with red beaks and red feet against a two-toned gold damask background, the whole encircled by a gold rondel. However, the beauty of Byzantine silks was not dependent solely on the pattern and color, for never have richer textures been made.

Gold threads were commonly added to the brocades and damasks, thus increasing their beauty as well as their costliness. Nearly all the birds of twelfth century origin were woven with golden heads and feet. Most of this thread came from the island of Cyprus, where it had been a special prod-

uct since its first appearance about 1000 A.D. Both the making of the gold thread and the embroidery of it flourished on the island for several centuries. References to Cyprian gold will be found in many of the subsequent chapters. This gold was basically a linen thread entwined with narrow strips of animal membrane the outside of which had been covered with the thinnest of gold leaf. Gold wire made from the pure metal was used only in embroidery.

One of the best known fabrics of Byzantine design is the beautiful silk which was found in the sanctuary of the great Charlemagne at Aix-la-Chapelle. Though there is some uncertainty as to when it was made it was probably not included in the original burial, though one authority states that it was a gift to the great emperor from Pope Leo III in 801. Charlemagne was entombed in 814, but his rest was disturbed several times after that, once when Frederick Barbarossa had him exhumed in 1165. His bones were finally removed to their present location in 1215. The silk was probably included when the tomb was opened about 1000 A.D. It has a bold rondel pattern enclosing only one figure, an elephant of unusual form with a jointed trunk and lion's paws. His counterpart is in the adjoining rondel. Against a mellow red-purple background stands the motionless yellow figure, with trappings of blue. The decorative, but rather abstract, foliation suggesting the tree of life which fills in the background is green and yellow. It is a wonderful piece of weaving, one worthy of a great emperor. The dalmatic of Charlemagne, woven in Byzantium in the twelfth century, and now in the sacristy of St. Peter's in Rome, was made of blue silk with two Biblical scenes magnificently embroidered. One other textile of this period of which there are several fragments was designed with three different motifs within three adjacent rondels. They were all of Persian origin—the winged horse, the elephant and the hippocamp. The figures were woven in black and outlined in blue against a

red background, and the binding circles were studded with white discs.

The thirteenth and fourteenth centuries brought marked changes in textile patterns. The horsemen and the warriors were gone. When the *hom* motif appeared it was as a conventionalized plant form without significance, and it was gazelles or doves that flanked it instead of rampant lions. Pairs of regal-looking birds were displayed within the ogival frames, and occasionally the frame was done away with, leaving only the form. The arrangement was still formal and symmetrical, and the colors were like those of imperial Constantinople, but the charm had somehow been lost.

2

THE STYLE OF THE OTTOMAN EMPIRE

The year 1453 saw Constantinople overthrown once more when the Turks included this ancient city in their Ottoman Empire. Roman power had been dwindling for many years and it did not take any great force of the conquering Turks to depose a Christian ruler and put a Moslem in his place. The Ottoman Empire achieved its zenith during the reign of Suleiman the Magnificent (1520-1566), the great leader in whose memory the beautiful mosque now standing in Istanbul was built.

The Turkish craftsmen who had been living in Constantinople for some time had intermarried with the Greeks, the Syrians and the Jews. With the change of rule and the establishment of the church of Islam they were spurred on to new heights. They knew architecture and so built fine palaces and mosques after the fashion of their Byzantine predecessors. They were experts in ceramics, but perhaps their greatest artistry lay in weaving. The designs were basically

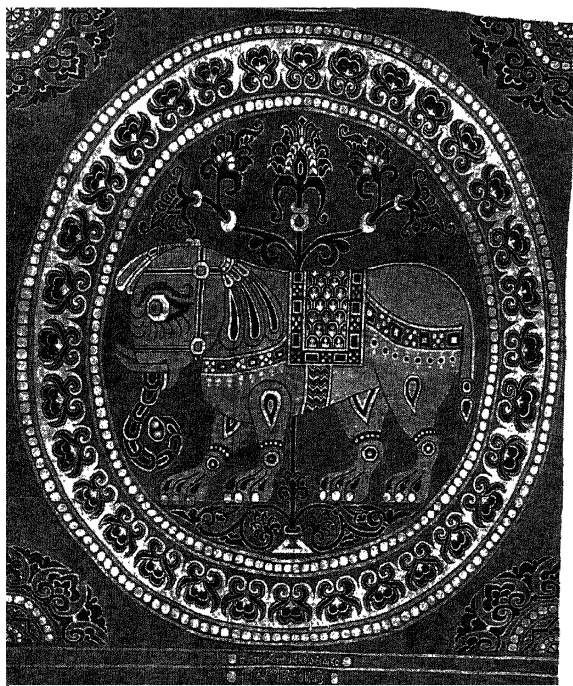


PLATE 11. A reproduction of the marvelous silk fabric from Charlemagne's tomb. Probably woven in Byzantium in the tenth-eleventh century, the gold, blue, green, and pink design stands out from the red-mulberry background. The fabric is in the Cathedral of Aix-la-Chapelle in Germany.

Reproduction in Victoria and Albert Museum, London.

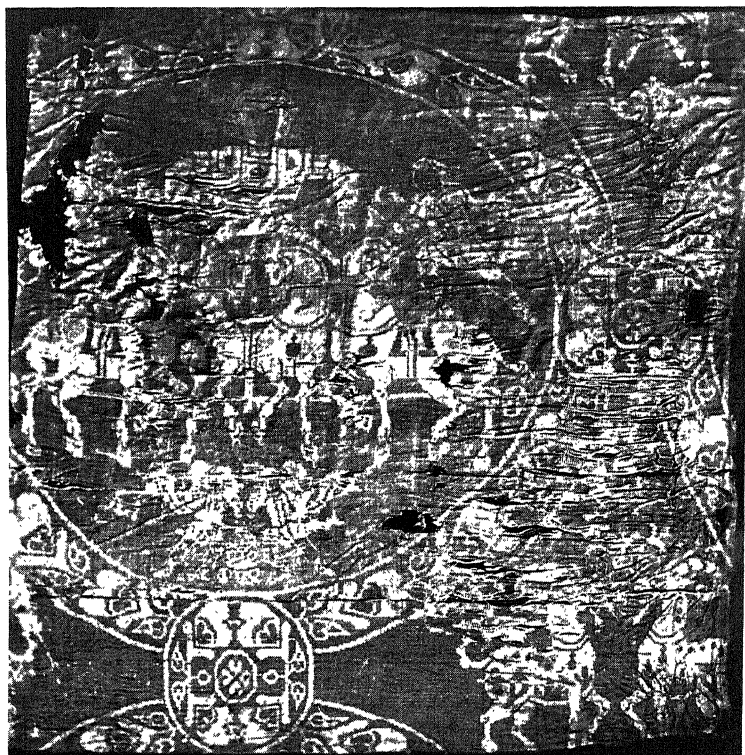


PLATE 12. The famed Quadriga motif woven in the sixth century in Byzantium. The yellow figures are almost lost against the pale blue satin background. From the Treasury at Aix-la-Chapelle.

Courtesy Musée de Cluny, Paris.

Byzantine, but the elaborate ornamentation was purely Arabic. They followed the traditions of the Prophet more closely and in consequence their designs were more clean-cut and definite.

Broussa stood second to Constantinople as a weaving center and Scutari achieved her own fame for splendid floral patterns. About 1500 the weavers seem to have lost their ingenuity, if not their skill, for at that time they depended largely on Venice for their designs. Some of the brocades made during that period surpassed even those of the contemporary Persian weavers. Even though the patterns were conceived in Venice they were rendered with a true Oriental touch which at the same time indicated their unfamiliarity with that type of design. It is this little foreign flavor that differentiates them from the similar fabrics made by the Venetians. Working from such a good foundation they were soon able to compose their own designs which were quite distinctive from those of their western neighbors.

Flowers entirely superseded the animal forms, for the Mohammedan law was fostered in the Ottoman Empire. The carnation was the favorite and with it were combined the hyacinth and the rose. At times these blossoms, highly stylized, formed a kind of hexagonal or ogival frame often without a central motif. Spaces that were almost diamond shape were made by intertwining vines and flowers, an idea copied from their ceramics. The artichoke had slender serrated leaves and now and then was used as a background for dainty flowers that were decidedly naturalistic. There was great simplicity in all these floral patterns and a sharpness of line that is entirely opposed to the more subtle curves of Italian designs of the same date. Sharply pointed ovals framed tulips and carnations which appeared to grow from an artichoke. The Renaissance crown, too, was often the connecting motif that tied bands of thorny foliage together. The crown seemed to have sharper lines and less regal ele-

gance than its Italian contemporary, even when combined with arabesques.

One bit of design that belongs definitely to this period is that of the three balls. As this pattern appeared only in imperial mosques its use must have been one of the regal prerogatives. The tomb of Seleim II in Istanbul is covered with a brocade of this pattern and tiles made in the sixteenth century with scenes appertaining to the emperor had the same insignia, though stripes were there also included.

The Turks had a great preference for velvets and brocades which satisfied to some extent their love for extravagant display. Cut velvet was the fashion of the day, but it was not combined with the uncut loops which was the custom with the Genoese velvets. As commerce had linked all these cities together the products of one were well-known to all the others. The velvets of Scutari achieved a great popularity in Italy, for the Oriental touch, if not too insistent, has always been intriguing. The Italian weavers finally endeavored to copy these Turkish velvets in order to satisfy their clients—and to keep them from spending too much money abroad.

The colors of the Turkish textiles were stronger than those favored by the Byzantine court. Against a crimson background a pattern of gold and blue stood out defiantly, with parts of the design outlined with white. Red and white against a gold ground made a striking effect and dark blue and silver brocade was enriched with multi-colored flowers. Red and purple and green were the usual backgrounds, when the patterns were lighter in tone. Bold colors tended to make the large brocade patterns seem more important, while smaller motifs designed for costumes were slightly more subtle in hue. To understand thoroughly their distinction these fabrics should be compared with those of Persia and Italy made during the same period.

CHAPTER IX

The Influence of Mohammed

1

EARLY MOSLEM ART

IT IS very difficult to segregate a certain group of fabrics and file them away with the tag Mohammedan for the textiles from so many different localities carried evidences of his authority. The Moslem armies conquered many countries but they left a permanent mark on only two or three. In the others the Arabic influence was short-lived, and not enough distinctive fabrics were made to merit special attention. The followers of the Prophet were originally mostly Bedouins from the desert, ready to throw their lot with any leader who could show them new lands and new treasures. They had no art of their own and very little religion, so it mattered not when the Koran was revealed to them as the Holy Word. What was presented to them they accepted without protest. If a definite trend in art and architecture existed in a country newly conquered they took it over and added to it only those requirements of religion and their daily life which were deemed important.

The story of the building up of this great empire is a romantic one, despite the fact that the new religion was established by sword and conquest. A young Arab, born in Mecca presumably about 570, was destined to be the prophet

of a new faith and the leader of a numberless army. From such a simple beginning as that of a camel driver Mohammed rose to heights equalled only by the rulers of the Roman Empire. In 622 came the Hegira, the migration to Medina, which marked the beginning of the Arab conquests that were to spread to Europe as well as to western Asia. Syria, Persia, Byzantium, India, Egypt, North Africa, Sicily, Spain and even parts of France all fell into the hands of his conquering armies. The conquest carried on long after his death, but all was done in his name and all was done for his glory. By the early eighth century the Mohammedan world spread from India to the Atlantic and the Moslems were the most powerful nation of medieval times.

Strangely enough in all this turmoil, art and science flourished. The refinement which was attained makes the bold Christian Crusaders seem vulgar and uncouth by comparison. The fullest development of this style will be found in Spain, the very essence of it in the beauties of the Moorish capital of Cordova. Though it necessarily varied in each country one underlying current was ever-present—the beautiful abstract forms which were the basis of all Arabic design. Instead of Mohammedan art being the art of one country it is the art of many all fused together by conquest.

The teachings of the Prophet dictated that there never be any pictorial representation of living things. This forced on various fields of artistic design a conventionalization of motifs that led to purity of line and simplicity of form. In consequence the perfection of line and pattern was achieved which made all Moslem art so decorative. As many of the Mohammedan princes who were firm believers in the faith were also lovers of fine fabrics, they had to effect a compromise. Lustrous satins and rich brocades, as well as the finest cottons, were all considered essential parts of their wardrobes. The Persian patterns they thought delightful but there were the forbidden figures of men and animals. The



PLATE 13. One of the sharply designed Scutari velvets from the sixteenth-seventeenth century. Gold threads are interwoven into the white design with red and green against a red background.

Courtesy Musée Historique des Tissus, Lyon.

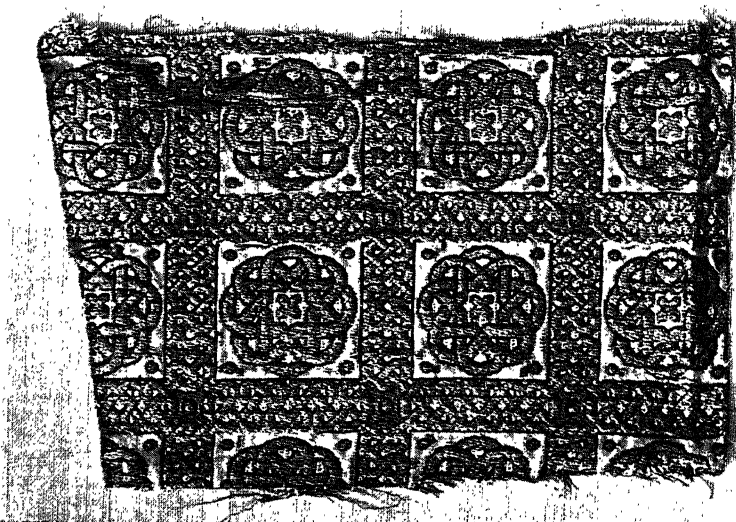
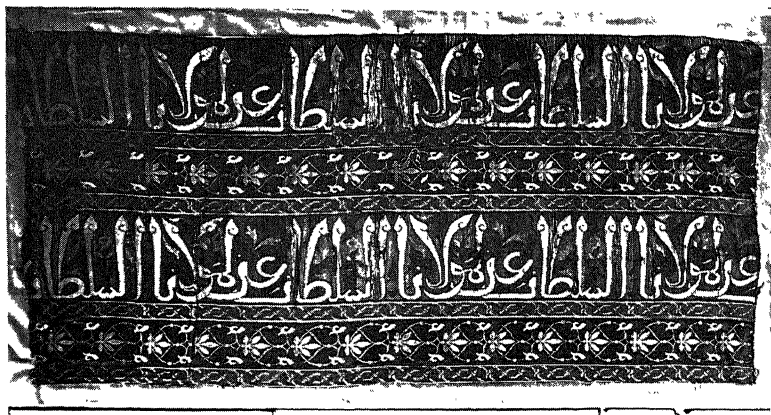


PLATE 14. *Top.* Moslem script interwoven into Hispano-Moresque silk. The white lettering is placed on yellow and black leaves. The decorative bands include yellow, white, and green on red.

Courtesy Musée Historique des Tissus, Lyon.

Bottom. A fragment of a thirteenth century dalmatic from the Lérida Cathedral. In this bit of Hispano-Moresque brocade the interlacing gold motif is outlined in white on a pale blue ground.

Courtesy Museum of Fine Arts, Boston.

one way in which to escape the wrath of Allah was to have these fabrics woven by Christian slaves. Mohammed's prohibition, written in the Traditions of the Prophet (Hadith), referred only to making pictorial representations and there was nothing about wearing them. In that way the curse fell on an unbeliever and so really did no harm. There were also some followers of the faith who decided that if the animate forms were highly conventionalized they would not be displeasing to Allah. Another of the Prophet's laws forbade the wearing of silk. One was not sufficiently humble when clad in such heathen grandeur. But it was just as easy to get around that, for when a cotton or linen thread was included then surely the whole fabric could be called by the more homely name.

The result of all these efforts to appease a religious belief, and at the same time satisfy a longing for luxury, led to some of the most interesting textile designs yet created. The basic quality of Byzantine design was acceptable because the band of the rondel lent itself so readily to the writing of texts from the Koran. The Arabic script was decorative, the circular form was harmonious, and when the quotations were for the glorification of Allah a double purpose was served. Not only phrases in praise of Mohammed, but expressions of good will as well as names and titles of caliphs were interwoven. The latter gesture, done to please the powerful lords, has been of invaluable help in dating some of the fabrics which otherwise would have been difficult to classify. The motif within the rondel was the cause of more study though the doublet of highly stylized birds lingered for a time. Sometimes a combination of Arabic characters was piled together to form an abstract design. Sometimes a bit of a Persian garden was used. The warrior and the hunting scenes of Sassanian derivation were of course forbidden, but still they appeared, for the Moslems were fully appreciative of their decorative quality. The animal patterns gradually

gave way to interlacing bands and the foliated scrolls which later developed into the graceful figures termed arabesques. The pure Chinese motifs were no longer seen, but the circular forms and the geometrical lines that had originally been borrowed from the East became a substantial part of the new style.

In the ninth century the sun and moon recurred frequently as motifs, particularly the crescent, for though derived from Sassanian patterns it had special significance to the Moham-medan. It suggested the sweep of the triumphant Arabs in a huge arc that stretched from Spain to Constantinople. Probably they planned to extend it across Europe the rest of the way around to make a full moon. Spiral forms were also introduced and the interlacing bands became softer and more flowing, more possible to blend with Naskhi, the rounded Arabic letters. By the twelfth century the Byzantine rondel had been superseded by stripes with many variations, or if the rondels were used they only increased the striped effect. Bands of Arabic writing, alone or with added ornamentation, gave to some of the textiles strong horizontal lines. The thirteenth century fabrics were characterized by broad masses placed in rhythmic repetition. It is interesting to compare these silks with those woven in Persia during the same era when the horizontal tendency was equally strong.

The Arab traders, shrewd as always, saw to it that these splendid fabrics were widely distributed. The fineness of the texture, the beauty of the design and the harmony of the colors, with the occasional addition of gold threads made them valuable. They were easily handled as merchandise and could be carried from place to place without effort. They could at times be used in place of money, if need be. They were also highly prized as gifts and every caliph took delight in sending marvelous collections of rich stuffs to neigh-

boring princes. They attested the superiority of his weavers and his court.

Some of the most magnificent figured silks came from *Damascus*, that ancient city conquered by the Moslem army in 634 and made their capital the following year. For sheer beauty of design and fineness of texture, Damascus was a leader in the twelfth century, even giving its name to one particular type of weaving (damask). The wealthy caliphs used these precious fabrics patterned in gold for their robes, for decorating their houses or tents, and even their horses were caparisoned with them.

There were three political and regional divisions in the Moslem world, the one including Bagdad and Damascus whose power spread even to Byzantium, the one in Egypt which took in most of North Africa as well, and the third in Spain. The same fundamental ideas were handled differently in each locality. For instance in India the Mohammedan influence only helped to strengthen the native designs. In Byzantium there was little apparent difference until the Turks came into power, and the Persians went blithely on their way employing patterns and weaves with which they were familiar and which they liked. In fact most of the elegance of ornamentation which the Arabs exploited they had derived from Persia. But in Egypt new weaves and new patterns followed the advent of the Arabs and a new style resulted, termed Egypto-Arabic.

2

EGYPTO-ARABIC FABRICS

There are two rather distinct phases of Arabic art in Egypt. The first one from the seventh to the twelfth century is the real Arab style, built on Coptic, Sassanian and

Byzantine tradition. It represents the true expression of the Arab spirit in the east. The second phase from the thirteenth to the sixteenth century is the age of the Mamelukes, for never has art flourished more brilliantly than under their rule despite the bloodiness of their conquests. Their greatest contribution was to religious architecture, rather than to textile design, and so to that era belong the exquisite decorative arrangements composed of inscriptions and arabesques which they rendered in marble. After their downfall in 1517 Egypt became part of the Turkish Empire, again ruled from Constantinople, and the decadent styles which ensued marked the end of Arabic art in Egypt.

But to understand all these differentiations we must go back to the Copts who had grown prosperous under Byzantine control. They were all but submerged by the conquering Arabs in 641, and thereafter for some hundred or more years the Caliphs of Damascus and Bagdad dictated as to their religion, their work, their mode of living. The Arabs newly come into the cultural centers of Egypt found a highly developed decorative art as they had in Persia. They took it over readily, but soon dominated the Copts as they had never been able to the Persians. The Arabs inspired in them a new desire for luxury and magnificence. However, it must be conceded that these roving Arab tribes, once they were firmly established in the fine cities of Egypt soon laid aside their nomadic tendencies and developed into rulers. The Copts, as Christianized Egyptians, gradually disappeared, and in their place appeared a new type of Egyptian following the leadership of the prophet Mohammed.

The Coptic style did not cease suddenly with the conquest by the Arabs, but where they did adhere closely to their original patterns the style slowly grew decadent. The animals became more grotesque and were ultimately converted into the conventionalized forms that were typical of all Islamic art. Silks were still woven in Alexandria for the

Byzantine churches up to 900, but the Hellenistic era was a thing of the past. Human figures, animals and birds were the more usual motifs, though after the seventh century they were more often confined in a hexagonal form than in a rondel. Kufic inscriptions were added to the decorative bands, and rosettes or stars filled the spaces between the larger motifs. Horizontal lines were emphasized by waving bands, some of which carried definitely pictorial patterns. There is, for instance, the often reproduced Alexandrine silk of the seventh century with Samson and the lion repeating face to face and back to back along a ribbon-like band.

One or two records of ninth century textiles present a picture of what the weavers were doing at that time. From Panopolis came a printed fabric, one of the earliest extant fragments of Egyptian resist dyeing. The technique of printing was probably not unlike that followed in Europe in the Middle Ages. Wax or clay was the medium for blocking out the pattern before immersing the whole cloth in blue dye. This particular design had series of white rosettes set formally within a trellis. Figure subjects and scenes from the Bible were also used for similar prints. As they were made under Moslem rule, and as the Copts were no longer creating Biblical designs for their own use, they were probably intended for the churches at Byzantium.

Tapestry woven decorations were still applied to linen tunics and at times wool was woven into a whole garment, but such remnants of the former style were very much in the minority. Brightly colored silk threads were more often employed for the weft in combination with a fine linen warp. Sometimes the decorative strips were woven separately and later applied to the linen tunics. One bit of Coptic weaving made in the ninth century included the cross as a central motif used in combination with a scrolled S, conventionalized birds in hexagonal frames, and a bit of Kufic writing. The whole pattern was rendered in white on black.

The tenth century was filled with discord in the Moslem Empire and Egypt was finally seized and ruled by the Fatimites, who were descendants of the Prophet's daughter, Fatima. They were quite as fond of luxurious living as any of their predecessors, and were not too bound down by Mohammedan tradition. As they had great riches they could well afford to enjoy wearing resplendent robes of velvets or damasks or brocades. Patterns of elephants, lions, birds and flowers could all be interwoven, and yet the robe was not too elaborate. They even liked an over-embroidery of gold and it is said that they had tents made entirely from cloth of gold. They were all great devotees of the arts and in the two centuries they ruled they did a great deal for the advancement of all artistic endeavor. Before they took over Egypt and Syria they had already conquered Sicily, so it seems quite possible that some of the rare fabrics with which the Fatimites adorned themselves were made on the looms of Palermo. (See Chapter XI.)

Alexandria continued to hold her place in the weaving world, despite the fact that most of the Greek weavers had migrated to Byzantium or Persia at the advent of the Arabs. Equally fine weavers had soon settled in Cairo, the modern city which the Fatimites founded in the tenth century. The records of the displays at the inauguration of that city read like fairy tales. The presents listed are almost beyond belief, ranging from five hundred horses whose golden harnesses were set with real gems and whose backs were covered with exquisite silks, to tents of cloth of gold and silk, and at the other extreme sheer turbans set with precious jewels.

Many of the Mohammedan princes set aside in their palaces special quarters for weaving and embroidery where only the finest products were created from the best silk and the richest gold thread. Perhaps a better idea of the esteem in which these princes held their gorgeous textiles can be obtained from the inventories of the estates of two of the

Fatimites. One left thirty thousand pieces of Sicilian embroidery and another, his brother, left twelve thousand costumes.

In the eleventh century a royal manufactory for silks under the supervision of an important director-general was set up at *Tinnis*, a town near Port Said. From some of the records it would seem that the silks from this factory were for the exclusive use of the sovereigns of Egypt. One traveller reported that they could neither be bought nor sold and that when people acquired them it was as a gift from a royal potentate. However, by the twelfth century these fabrics, or those from some other royal *Tiraz*, seem to have been made available to all the wealthy residents of the neighboring cities, and the merchants were carrying them to all parts of the Mohammedan world, even to such weaving centers as Syria and Mesopotamia. On one bit of ninth century linen there is an inscription embroidered in red silk which indicates *Tinnis* as the place of manufacture. They also made *buklamuns*, those heavy fabrics of vari-colored silk adorned with gold thread.

Damietta was particularly famous for a sheer white linen called *kasab* which was used only for turbans. Both this city and Debik made fine cloths of gold and the latter specialized in other beautiful silks including some of the *bhadanas* that could be made into garments only for caliphs. The tale seems rightly told that some of these Arab silks were so fine that a whole robe could be passed through a finger ring. A new line of princes had risen, Moslem ruled instead of Christian, but Egypt continued to be one of the important textile centers of the world.

Uneven dyeing of the linen warp threads in varying tones of blue combined with a vari-colored silk weft produced a kind of marble effect which was the fashion of the early tenth century. In that period there was a tendency toward more modulated coloring and the forms were all more rounded

and graceful. The interlacing oval medallions enclosing small birds or animals all rendered in pale hues created sort of waving horizontal stripes. The eleventh century seems to have been notable as the one period when the subtlest hues and the most closely harmonized color combinations were in demand. They inclined toward dark blue in the next century, though other rich tones were also in favor. Weaving light tan against dark brown produced the effect of modeled metal similar to their wonderfully decorative grilles.

The next period in Egypt was inaugurated by the conquests of Saladin, whose conflicts with the Crusaders have been the basis for many a romantic tale. Despite his defeat of the Christians he appears to have been most generous and chivalrous, though not at all interested in arts or letters. He had an impressive company of guards, who were former Turkish slaves from central Asia Minor. They were called Mamelukes, a word meaning slaves, and from their ranks were recruited the new leaders of Egypt who succeeded Saladin. They were barbarians and cruel in their massacres and oppressive in their rule, but we can forgive them much, particularly inherited tendencies, when we see the splendid buildings they created. From somewhere, perhaps association, they had acquired a fine taste for beautiful things. During their domination of Egypt fabric designs settled more definitely into a conventional style featuring remarkable arabesques. An appreciation for fine ornament was apparent and the delicate combination of beautiful arabesques and carefully drawn Naskhi characters made the textiles more elegant than ever. Only the finest quality of silk and the richest threads of gold were permissible in the production of these *chef d'oeuvres* of the art of weaving. The bold warriors on their prancing steeds were left behind, but a fondness for certain variants of the *honi* motif was still manifest. The whole pattern had become more stylized and the tree of life only a branching plant form of any description. By

the fourteenth century the art of Egypt was almost pure Mohammedan with special emphasis on the artistic use of Arabic script.

A brocade made in Syria at the very beginning of the fourteenth century had parrots and griffins stiffly turned back to back within an enclosing serpentine band of script, the whole pattern worked out in buff on green. This fabric was typical of the heavy brocades that the Syrians were weaving for the wealthy Mamelukes, and its likeness to Sicilian silks should be noted. Another damask of the same period had a highly conventionalized pattern rhythmically repeating against a delicate background which resembled the finest of arabesques carved in wood. One outstanding development of this century was the introduction of the polygonal field, particularly adaptable for heraldic emblems, which was repeated in so many forms in Spanish textiles.

Many of these rare silks have been preserved, but perhaps nowhere can we better appreciate the intricacy of textile designs than when we see them in almost exact reproduction in the elaborate grilles of metal or marble with which both palaces and mosques were adorned. The Mosque of Tulun in Cairo has an interesting combination of ideas, for it shows ornamentations that are definitely taken from the Chinese. The geometric shapes and interlacing bands are in sharp contrast to the more flowing forms wherein arabesques terminate in finely modeled foliations. Egypto-Arabic art had reached its height and with the usurpation of power by the Turks from Constantinople it gradually grew decadent. But to the west where the Arabs had mingled with the Berbers there was developing an even finer expression of purely decorative design.

CHAPTER X

The Textile Arts of Spain

As THE conquering Mohammedan forces progressed toward the west they gradually absorbed all the native tribes dwelling along the Mediterranean shores of northwest Africa. The Moors, including the original Berber tribes, were not so easily dominated. They have always exhibited a remarkable individuality which is apparent even today in Morocco, the only stronghold left to them. It was these Moors, joined with the Arabs of the east, who first crossed the Pillar of Hercules, took Spain over for their own, and held it from about 730 to 1492. It is their sovereignty which has given to Spain a foreign flavor unlike that of any other part of western Europe.

As already noted the nomadic Arabs had practically no art of their own, except a few ornamental motifs. They had everywhere assimilated that which they found already established and added to it or modified it to suit their needs. However, the use of quotations from the Koran written in the flowing Arabic script was almost universal. With this decorative writing they combined interlacing bands, stars and certain geometric figures. The designs had become more and more abstract and even when conventionalized figures appeared they were well within the Mohammedan precepts for they never had any semblance of reality.

Whereas the Arabs loved grandeur the Moors were more interested in refined splendor. Their skill was more subtle than that of the eastern tribes, for they never used super-

fluous ornament, despite the apparent intricacy of their designs. It was the art of the Moors, then, rather than that of the Arabs which was the foundation for the early art of Spain which is generally termed Hispano-Moresque. This intricately ornate style which has been the backbone of all Spanish art has survived many changes of thought and is even today its chief characteristic. Christianity was introduced by the Crusaders, but the Hispano-Moresque style was little affected. The Italian Renaissance was the first ornamental art from the outside which left any real imprint. The period that is often called the Spanish Renaissance was a strange combination of the vigor and boldness of Christian art and the suave flowing lines of the Mohammedan. It represented the blending of eastern and western symbolism and patterns. Though the Moors themselves were driven out of Spain in 1492 they left a permanent mark on this Christian country, and the old Moorish background of modern Spain has added greatly to its charm.

When the Moors came into Spain they found the native art almost untouched by outsiders, so they were able to develop it as they wished and they did it to the best of their great ability. Their patterns were wonderful examples of perfectly satisfying curves and the most abstract motifs had a sculpturesque quality that was always pleasing. Their handling of dark and light, high-light and shadow was a supreme achievement. They are probably better known for their fine work in metals and for their ceramics than for outstanding progress in textiles. But they did give us many fabrics of interest, particularly in color and pattern.

The Moors had brought a knowledge of weaving with them when they migrated into Spain and they soon set up looms in various sections of the country. *Cordova*, the city they selected for a capital, developed into a great weaving center, and even as early as the ninth century was exporting precious silks to other Mohammedan lands. Seville, Toledo

and Malaga were industrial centers, too, but the heart of the silk industry was *Andalusia*, along the south-eastern sea-coast. Only a short trip from the African shores, the weavers and silk-growers had settled there in great numbers. The climate was ideal for the raising of silkworms, and sericulture soon became commercially important. *Almeria*, the capital, was especially noted for the silks of excellent quality and delicate charm created by her weavers. By the year 1100 there were over eight hundred looms working in *Andalusia* alone according to authentic record. They practised various types of weaving, exhibiting great skill in making textures similar to those of Alexandria and Byzantium. There are also some remnants of tapestry weaving not unlike that of the Copts. They went even farther though and employed the same technique on fine silk gauze. A piece of sheer stuff decorated with a fine band of colorful tapestry still exists which was made just before the end of the tenth century.

The Caliphate of Cordova was the center of Moorish art in Spain for several centuries and it is there that the truest expression of this complicated style was created. After various internal dissensions a new Caliph was brought from Damascus in the eighth century who held the various conflicting forces together. With him came a horde of his followers, mostly Syrians who were artisans in every line. The textile workers naturally favored the Oriental traditions on which they had been brought up, particularly the style of Persia. They were familiar with the doublet and the symmetrical treatment of animals, birds and flowers. They knew just how to divide a rondel with a central tree and place birds or beasts *affronté* or *adossé* on either side. The one outstanding characteristic of the doublets of that type which were made in Spain was that the heads of birds or animals were always turned in the opposite direction to that of the body. That is, if the bodies were back to back the necks were



PLATE 15. A Spanish chasuble of the fourteenth century. On this handsome lampas the trees blossom into pineapples, and the animals have most amusing faces.

Courtesy Metropolitan Museum of Art, N.Y.



PLATE 16. *Top.* A thirteenth century silk from Palermo made of only two colors—blue and yellow-beige. The fleurs-de-lys set in chevron formation are separated by bands of Arabic, indicative of the mixture of Oriental and Occidental designs and beliefs.

Courtesy Musée Historique des Tissus, Lyon.

Bottom. A highly stylized Sicilian silk of the twelfth-thirteenth century. The crested birds in doublet form are woven in black on white.

Courtesy Musée Historique des Tissus, Lyon.

so twisted around that their heads faced each other. This may have been done in acknowledgment of Mohammedan tradition for it certainly made any figure appear less realistic. The Arabs from Persia or Syria had never been very devout and this gesture may have been a sop to appease any vestige of conscience that was still evident.

But these foreign weavers brought still other traditions to Spain with them. They had been long and thoroughly trained in the patterns used in Byzantium and they had even before that worked over many of the Coptic motifs. Their preference for geometric figures can be definitely traced to that source. Egypt, of course, by this time was completely in the hands of the Moslems, and Arabic script provided another source of ornament. That, too, the Hispano-Moresque weavers adopted, so that the textiles they designed showed a mixture of these many influences.

The rich Moslem princes in Spain favored the patterns from the east and found it quite as easy to overcome the Prophet's laws as had their predecessors in other countries. They were, however, always careful not to offend the masses by flaunting publicly any such apparent defiances of Islamic tradition. All robes and hangings for use within the mosques or for public appearances were well within the prescribed limits of design. But in their homes and at fêtes that were not public they could revel in the more picturesque patterns that were so appealing to them. In addition to the designs that were so definitely eastern there were some small repeats of geometrical compartments, and the beginnings of the interlaced lines which later became so important. Colorful tiles found in houses and churches of that early period show the same fondness for small tight patterns.

Late in the eleventh century the African princes, the true Moors, invaded Spain and drove out the last of the Arabs. That marked the beginning of the era of pure Moorish design which was in full glory in the fourteenth century. They

put a stop to the use of animal patterns and when the imaginations of the artist-designers were thus held down they had to develop more complex patterns of lines and writing and geometrical figures. They worked always with line rather than with form. Their patterns were intricate but not confusing, and there was a certain fluid quality to them, even when worked out within squares or the eight-pointed star which was a relic of Coptic design. Rich brocades of the early twelfth century still carried rondels and occasionally fantastic birds in doublet form but the band of the rondel was the important thing for it was filled with Arabic writing. The Moorish rondels were usually interlaced which again placed the emphasis on line rather than on the form.

By the thirteenth century Christianity was firmly established in Spain, having been brought even more to the public attention by the stories of the Crusades. The Christian influence was most evident in the north, but made little headway because Moorish art was at its zenith. No amount of Christian teaching, then or now, could destroy the love for intricate design which is such a strong Spanish characteristic. Splendid ornamentation and a leaning toward bold, almost harsh colors are even today a definite part of their Moorish inheritance. Their finely carved marble grilles, beautifully wrought metal-work and hand-tooled leather all reflect this same inbred fondness for decorative effects. Some of the textile patterns of the thirteenth and fourteenth centuries seem better adapted to a finely detailed painting than to a woven fabric.

The building of the Alhambra at Granada in the middle of the thirteenth century set up a new and unparalleled standard of beauty in design for others to strive to equal. This superb architectural triumph is the purest expression of Moorish art and it is unfortunate that the conquering Christians of later years allowed so much of it to be destroyed. But the art of the Alhambra, like the art of Greece

at its purest, is entirely cerebral, and many feel that it needs some inner fire, some symbolism, some representation of emotion to make it truly live. Most of the designs are just a shade too indefinite, they start nowhere, they reach no end, they flow on without cessation.

The Hispano-Moresque textiles of this era were examples of perfection in the technique of weaving, in the quality of the silk used, in the splendid intricacy of the design which was never confused, and in the clear bold colors. Many patterns were copied or developed from the designs of the Alhambra and though the original motif may have been in purest white marble the textile was usually of red and gold silk. Almost any kind of finely interlaced ornament without animal forms was classed as in the "Alhambra style." Richly colored silks were woven with strap-like bands so intertwined as to form polygons and stars. Arabic script of elaborately decorative character appeared on wall tiles, in stucco ornaments or in lustrous damasks. The marvelously contrived wooden ceiling of the Alhambra itself was repeated as a design for a silken fabric. Backgrounds of checks or triangles or other small diapered patterns all resulted from this influence. When flower forms were used they, too, were rendered in such a conventional manner that they seemed an integral part of the tightly knit purely abstract design. Never have there been such perfect examples of the beauty of curved lines set in juxtaposition to straight lines.

Long before the Moors were driven out the influence of the Italians was evident in Spain. The Christians had been gaining ground and by the early thirteenth century, the only stronghold left to the Moors was their city of Granada. In consequence the struggle between the two religions was obvious even in textile designs. Where Christianity controlled the weavers a new type of motif flourished, and where Islamic law motivated them the patterns were still abstract and more intricate than ever. Horizontal bands became the

fashion, some including small repeating motifs. One thirteenth century striped silk, woven in black and white only, is exceedingly decorative though there is no ornamentation other than the Naskhi script.

In northern Spain heraldic emblems, an echo from the Crusades, were generally preferred and stripes of various colors were augmented with armorial bearings. The lion of Leon and the castle of Castille headed the list, but double-headed eagles and hounds and swans and numerous other forms were all displayed within the conventional fields. One splendid specimen of thirteenth century silk is part of a robe belonging to Don Felipe, the brother of Alphonso X. Horizontal bands of varying widths, separated by bands of Kufic characters, include interlaced rondels and eight-pointed stars. It is very rich in color, bits of clear blue and quantities of gold standing out from a dull red background. Another brocade from the same period shows a strong Italian trend, for the central motif is that of seated figures with a lamp between them. The colors, less bold than in more truly Moorish fabrics, are red, green and white with gold threads interwoven. One interesting detail of that particular piece is that each figure was outlined in the weaving by a very fine thread of contrasting hue.

The Saracenic weavers had held their own against the flood of designs as well as craftsmen from Italy. They had even introduced the new-comers to the weaves and patterns of old Spain. That to some extent explains the frequent association of contrasting ideas, the use of pure Moorish design in the same textile with the insignia of the Crusaders. Vestments made for use in Christian churches were woven by pagan hands and decorated with texts from the Koran. The Christian church was apparently more interested in the gorgeous quality of the texture and its regal aspect than in the symbolism of the design. The Mohammedan church, on the contrary, cared only for the meaning of the pattern and

its reflection of the true Mohammedan spirit, and its texture might just as well or even better be of cotton as silk and gold.

It was after the middle of the fifteenth century that a real change was apparent in Spain. The good monarchs, Ferdinand and Isabella, were ruling a country that was largely Christian in the north and Mohammedan in the south. Diaz found his way around the Cape of Good Hope in 1486, and three years later Vasco da Gama opened up trade with India after he had traversed the treacherous Indian Ocean. With the discovery of these new lands traders seemed to have found the shortest route to wealth. Gold from distant countries was flowing into Spain and her people were ready to bargain with the rich merchants from east or west. Italian artists were attracted to this country where riches, they thought, would be theirs for the asking, and craftsmen soon followed the artists. It was in the same year (1492) that Christopher Columbus made his eventful and successful trip to the west that the Moors were finally expelled from Granada.

Handsomely embroidered velvets and brocades from Genoa and Venice were imported for the newly rich dignitaries. The silk looms of Cordova and Granada continued to function and quantities of gold thread were introduced into all patterns, especially those that had a background of red satin. But the glorious fabrics of the neighboring state, just become commercially accessible, seemed doubly desirable so the silks from Italy were in high favor. The fabrics made in Granada still maintained their Mohammedan appearance despite the strong pressure from the outside. There was a delightful combination of Moorish tracery with sweeping Italian scroll work. Coats of arms and arabesques were somehow blended together.

The word *arabesque* is one that has always been overworked for it is applied to such diversified types of orna-

mentation. The term is not accurate for the word itself refers to something Arabic whereas the arabesque, as conventional floral ornamentation, was used by the Romans. Considered as part of Saracenic ornament it was supposedly evolved to fill in spaces where natural forms were precluded due to certain religious traditions. Its charm lies in its intricate arrangement and in the softly flowing quality of the lines which fill a given space so perfectly and pleasantly. When the Arabic forms were finally discarded, this alone was retained. The Moors carried back to Morocco with them the simplified ornamentation which they had perfected and there it may be seen today in all its exotic splendor.

The influence of the Italian Renaissance was toward more flowing lines which spread over a larger surface. Animals had quite gone out of fashion and the lotus, palmette and pomegranate gradually replaced the abstract forms and even the "mock Arabic" which was without significance. It had not been the intention to ape the real Arabic, but due to an increasing interest in decorative line, as the forms were made more pleasing to the eye the original meaning of the characters was lost. Pointed oval frames were formed by waving bands converging together and within the enclosure appeared the typical Renaissance foliation. An overlapping and interlocking of pattern with rosettes and ornamental circles was a remnant of Hispano-Moresque tradition. The "plateresque style" of the early sixteenth century to which reference is occasionally made was the leaning toward small decorative forms that were slightly more naturalistic than those of the previous Moorish period.

Spain reached her artistic zenith in the sixteenth and seventeenth centuries when her artists were strong rivals to the masters in Italy. As Italy gradually slipped from her place as leader of the artistic world it seemed for a while as though Spain might be her successor. But due to internal unrest that glory was due to last only a short time and she

lost her prestige to France. Charles V (1519-1556), of whom we shall hear more later, did a great deal toward this artistic recognition of Spain. The seventeenth century carried on the good work and though Philip IV who ascended the throne in 1621 was a profligate he was at the same time a great patron of the arts. Velasquez, El Greco, Murillo and Ribera all helped to put the art of Spain before the world. Then came religious intolerance and internal wars which resulted in a decline of all the industries and by the end of the seventeenth century the fabrics of Spain had lost their importance.

Even when the art of the Spanish Renaissance was in full flower it reflected the character of its Italian models. The textiles were gorgeous, those made for export as well as those for home use, and many consider them comparable to the silks of contemporary Italy. The patterns were bold and flamboyant with sufficient vigor to correspond to the strength of the colors. Spreading motifs of great size were built up around the cone-shaped pomegranate. By the seventeenth century the last of the Arabic designs had been discarded in favor of the foliated patterns borrowed from Italy. By that time ogival frames were made of vines or lanceolate leaves instead of waving bands. In one brocade of the late sixteenth century the conventional oval frame was made by rampant lions, nose to nose to form the upper angle and tail to tail to form the lower point. Arabesques still held their place though they had become more fulsome and Romanesque. The backgrounds were for the most part sprinkled over with fine diapers or separate little floral motifs. The bold pomegranate of Italy was the leader, and the bolder or more fantastic the pattern the more chance it had of being a success.

In the following centuries Spain followed through the various artistic phases that came to her from her neighbors. In the late seventeenth century the Baroque style was in favor, and following that came the flamboyant patterns, still

formal in structure using birds, flowers and crowns similar to those of contemporary France. In the eighteenth century they caught the fever for classicism and produced many silks in that manner. As their colors and their silk were both inferior to those of France, Spain acquired no lasting fame in that temporary phase. Of recent years the art of hand-loom weaving has been extensively revived in Spain. Her peasant art is full of naïve charm and a richness of color that no other country can equal.

The Spanish weavers were familiar with all different fibres though we are apt to remember only their gorgeous silks. Many of the brocatelles woven for use in their churches had the proverbial linen back and heavy silk surface. Some also included wool, and there are remnants of woollen damasks which are quite as rich as their silken rivals. It is said that Spain was the first country in Europe to know cotton, both the thread for weaving and the plant which they cultivated successfully. Apparently it was another of the treasures brought in by the Moors. There is an article written in Arabic during the twelfth century which explains in great detail the scientific methods of growing cotton. However, it was only when the seventeenth century prints from India began to be so popular that they set themselves seriously to the task of raising cotton. Cordova, Seville and Granada developed good businesses in the weaving of cotton. Barcelona was famed for her fustians and most of the heavy sail-cloth used on the Spanish galleons was manufactured in that seaport. They soon discovered the versatility of cotton, for they knew how to make cloths as soft and as fine as silk, others strong and heavy for rough clothing, and heaviest of all the canvas to be used for sail-cloth.

Linen and cotton have usually had their own type of designs quite apart from the trend of fashion in brocades and damasks. When the Indian prints were so much in demand it stimulated the artists of Spain to try their hand at printing

and painting. That they took France as their model, and not India, is apparent from the quality of design they turned out in the late seventeenth century. The Spanish prints had the distinct characteristics of the French toiles (see Chapter XVIII), though not rendered in the same colors. The reds, blues and purples found in the eastern prints were more appealing to the Spanish taste, so those were the colors that they employed. The old "Lisbon prints" which were frequently mentioned in the literature or letters of the seventeenth and eighteenth centuries referred not to Lisbon as the place of manufacture but as the port into which they came from the east and from which they could be purchased.

While the Moors occupied Spain they used quantities of rich textiles in their houses. High ceilings and plain plaster walls above cool tiled dados and floors may have been practical but they provided none of the pattern and color which were so dear to their hearts. So they used fabrics to cover the great expanses of wall, sometimes setting them in specially built panels above the tiling. Doorways were curtained with priceless silks, and beds were draped with the richest fabrics that could be bought. As very little furniture was used in their spacious rooms they doubly needed the vitality and movement provided by the beautifully patterned textiles. Even the walls of the churches were hung with damasks and the clerical vestments were heavy with gold embroidery.

Spanish beds which have always been such tremendous works of art were luxuriously canopied and topped with elaborately carved crests. The head-board with its scrolled top was upholstered with brocade or embroidery or lace, and the cover for the bed was often a combination of other rich textures. The peasant people in the outlying country districts made their own handspun and hand-woven linen into simple clothing that could be embroidered with wool after the fashion of the day. Their rather crude but colorful beds were also draped, but with printed cottons instead of silken

damasks or brocades. A similar effect was created in a less expensive way. The wondrously wrought iron grilles on the doors of cabinets were lined with richly colored velvets. High backed chairs that were as uncomfortable as they were splendid were upholstered with tooled leather or gold embroidered velvets. Heavy gold gimp and knotted fringe completed a chair gorgeous enough for a king. Brocades, damasks, velvets, both cut and uncut, cloth of gold, fine tapestries, deeply piled plush and elaborately printed cottons all found a place in the house or in the church.

Though the same richly brocaded silks had previously been used for costumes, the fashion which prevailed in the sixteenth century demanded a change in the size of the patterns. A huge pomegranate design just did not look well made up in the prevailing mode. This recognition of a new use for textiles led to the designing of different patterns for clothing from those used in decorating houses and churches. This same distinction in types of fabrics will be found in the other progressive countries of the same period. Nowhere better than in the pictures and portraits of the day can we study the diversity of textures and patterns. Lace and cloth of gold and jewels and ribbons were no more elegant than the silks and velvets.

Velasquez was court painter to Philip IV, and though he had always to paint the same people over and over again he somehow managed to give them variety. As he was so sensitive to fine textures perhaps he minded less having the same subjects so long as their costumes were varied. Not that the fashions of his day were particularly appealing, for they were stiff, cumbersome and often made the figures look more awkward than they really were. One of Velasquez' warm friends was Rubens, that versatile artist and friend of Charles I of England, who painted the great pictures of the dramatic life of Queen Marie de' Medici for France. He

also took great interest in all textile designs and made cartoons for tapestries.

Color has always been an integral part of the art of any country, but never has it been more important than in Spain. Under Saracenic influence the chief colors were red, blue and gold. Instead of being softly blended together they were vigorous and harsh and stood out in strong contrast to each other. By the fourteenth century red was predominant with green and yellow and white worked in. A rich blue background and a bold pattern in yellow gold was the color scheme of many of the sixteenth century damasks. Red, blue and purple seemed to be the choice of the seventeenth century buyers. The eighteenth century reflected the popular French colors only without any subtlety or finesse. As so many of these fabrics were over-embroidered with gold it has always seemed that yellow gold was the favorite hue. It is the one that we find in Spain today, one that is suited to her climate and her deeply contrasted lights and shadows. The history of Spain is so filled with color and with romance that it cannot help shedding an aura over the textiles made by her weavers.

CHAPTER XI

Saracenic Art in Sicily

SICILY, that triangular-shaped island at the toe of Italy's boot deserves a chapter all to herself in any history of decorative textiles. Small though this island is, it has lived through quite as much turbulent history as large domains on any continent. Presumably the Cretans or Phoenicians first discovered this fertile island and a large colony was established there about eight hundred years before Christ. Then, traded about like baggage, she was first a colony of Greece, then of Carthage, and finally of Rome. In 535 when Justinian was ruling in Constantinople, Sicily definitely became a part of the great Byzantine Empire. The Christians were just nicely settled there when the Mohammedans started on their migration toward the west. They first visited the island in the middle of the seventh century and finally came back as conquerors in 827. By that time the force of the Mohammedan power was nearly spent and though the natives of Sicily were placed under Moslem rule they never professed to be devout followers of the Prophet. The Christians were shoved up into one corner of the island and the rest were allowed to do about as they pleased. These islanders who could claim descent from almost any race had a strong personality of their own which outlasted the Moslems and which even today is noticeable. It is rather unfortunate that they were dubbed Saracens for they were never the strict adherents to Mohammedan tradition that that name would indicate.

Arab rule was of short duration in Sicily though the Moslems were not driven out until 1060 or thereabouts. For one thing at least we must give them due credit—they established silk weaving. In 827 looms were set up in Palermo though undoubtedly the only artisans employed at first were those who followed in the train of the conquering army. They used as models the fine silks which the Moslems had brought with them, for the islanders were a little bit too isolated to be familiar with the latest modes in the great courts of the world. Very soon other migratory weavers arrived, coming from Persia, Syria, Byzantium, and even India. Naturally they were all well-versed in the patterns of the east and the likeness of Sicilian to Byzantine design was due largely to them. During the period when Sicily owed allegiance to the Fatimite Caliphs of Tunis and later of Egypt they produced such fabrics as were then in fashion. That they were acceptable is evident for they were exported to Egypt where they competed with the silks from Byzantium, Alexandria and Cairo.

There is some controversy as to just how much the Sicilians learned about weaving from the Mohammedans. So eminent an authority as von Falke believes that they were practically untrained, that the fine coronation robes* were all woven in Byzantium, and that silk weaving was not known prior to 1147. Others have found proofs for the belief outlined above that they did understand silk weaving, if only to the extent of copying the fine silks created in other countries. Quite definitely there was nothing noticeably different about their designs or weaves during the days of the Moslems.

The patterns were so much like those of Byzantium that it is difficult to prove the origin of many of the damasks and brocades. The weavers, as already noted, were for the most part Mohammedans so they tried to keep the patterns within

* See page 146.

the prescribed limitations of the church. But though the religion of Islam did affect the customs of the people and did influence the weavers it was never the dominating force that it was in many of the other colonies. Highly stylized birds and animals were set within rondels that carried texts from the Koran. Some pure geometric forms were used, though the Byzantine circle was more frequent. Bands and stripes containing animals and bird motifs marked the beginning of the furore for horizontal repeats which later became so important. As so many of the weavers were from Africa it was the birds, animals and flowers with which they were familiar which they wove into those Saracenic silks. There were giraffes and elephants, gazelles, lions and deer, and even the fighting *cheetah* (hunting leopard) of Assyrian origin.

It was about this time that the weavers became interested in the idea of interweaving bits of gold thread, the head and feet of a bird perhaps, or just a round patch to fill an otherwise empty space. Spanish designs, or rather those classified as Spanish, appeared frequently for there was a lively commerce between Sicily and Andalusia. Sometimes it is very difficult to distinguish the Sicilian fabrics from the Spanish ones of the same era. In the textile collection of the Musée des Arts Decoratifs in Paris they are for the most part lumped together.

The real history of textiles in Sicily begins with the advent of the Normans. Those hardy conquerors from the north under the leadership of Count Roger Guiscard and his brother landed on the island in 1060, and some years later had gained full control. From that time on the star of Sicily was in the ascent. Weavers migrated there from all the great weaving centers, each bringing his own ideas as to intricate and pleasing textures, and what was to them the last word in design. Byzantium, as the source of all fine textiles for so many centuries, provided most of the patterns. Doublets of birds and animals in rondels or other confining

forms that were decorative led the procession. But even in the eleventh century there was a trace of something different, something that was going to mark these Sicilian fabrics as distinctive. The patterns were not quite so stereotyped, there was a spark of playfulness lurking there, and an *esprit* that was neither Byzantine nor Moslem. One remnant of Mohammedanism was the band of Arabic script which more often than not could be translated into the name or title of a person. The origin of this idea had been that the wealthy caliph who had fabrics made to his order might have the pleasure of seeing his own name interwoven. But after the downfall of the Mohammedan princes, the name or title was usually fictitious and had no aim in life other than to be decorative.

All the fabrics of Sicily made early in her history or late are called Saracenic. That name could certainly be ascribed to those manufactured under Moslem control and perhaps to those that were made up to 1130. But after that they were more distinctive, they had lost their Arabic origin, so they should be called Saracenic only if that name means Sicilian. They stand in between the pure Moslem art of Egypt and Spain, and the fine medieval and Renaissance art of Italy. From the tenth to the thirteenth century Sicily was famous as a weaving center, but she reached her zenith in the twelfth century when she was acknowledged as the leader that had replaced Byzantium in the world of textiles.

Seldom has there been a more picturesque monarch than Roger II, the Norman who ascended the throne of Sicily in 1130 and ruled with an iron hand until 1174. The stories of that time all seem to agree that he was very tall and very strong, with long fair hair and a flowing beard. Having selected Palermo for the capital of his kingdom he built there a superb palace. He brought in foreign labor, lured by the promise of riches, and made them work side by side with the native Saracens. The Greek tongue was heard quite as often

as the Arabic. Being particularly interested in the artistic and commercial development of his people he recognized the possibilities in the weaving of fine fabrics. In order to increase trade and speed up production he imported artisans in a rather ruthless manner. The story goes that he commanded one of his generals to go out and raid Greece in order to bring home expert weavers. His one stipulation was that "they must be beautiful." It is duly recorded that the weavers were brought in, from Corinth and Thebes and Athens, though there are no statements as to their pulchritude.

The king set up a "Hotel de Tiraz" in part of the royal palace following the fashion of the wealthy Mohammedan princes. There the captured Greeks worked in harmony with the Saracens, for all races, creeds and languages were blended together in peaceful pursuits. Palermo has been called the city of three-fold speech, and as proof of that one can see even now on the walls of an old church inscriptions in Greek, Latin and Arabic. It might be noted in passing, however, that it was the Greek tongue and the Christian religion which survived.

Great pride in the products of his weavers led the king to permit them to weave in on the border the name of the factory and the date of the weaving. After a short time the royal workshops had to be enlarged and the variety of fabrics turned out was enormous. Sheer silks of gauze-like texture interwoven with gold were among their earliest special products, but they were equally clever with the heavy brocades embroidered in gold. The making of gold thread became an important feature, and gradually Sicily replaced Cyprus as the home of gold thread and gold embroidery. She was not always credited with it, however, for the name of Cyprian gold appears more frequently than any other.

The reign of Roger II was a most prolific period and one that is of extraordinary interest to us. The patterns were

full of vitality for the playful and characterful idea was increasingly apparent. The most outstanding characteristics are two—the use of a suggested ogival form and a horizontal movement that quite replaced the vertical effect that had been obvious for so many years. The pointed oval was sometimes made by vines or lines or bands that just casually intersected each other and so made a frame for the central motif of animals or birds. Very often there was no enclosing form, just the general outline of the large motif. A two-headed eagle with wide wings was used as a kind of doublet, the contour suggesting the pointed oval. The pomegranate (our old friend from Persia) flowered in such a way that the whole motif resembled an ogive, and so on.

The horizontal effect was also obtained in a variety of ways. Straight or zigzag bands with repeating birds or animals were the most obvious, and though quite like those of the previous era they carried more amusing patterns. The better and more complicated designs were those where the horizontal repetition of a larger motif gave the effect. Pairs of birds repeated in regular order and one twelfth century damask had pairs of peacocks repeating horizontally with different colors for different rows. Peacocks were the great favorites of that period and were frequently shown strutting along with tails spread. Eagles, swans and ducks all appeared in one silk, or lions, harts and dogs, the whole pattern symmetrically set in horizontal lines. It was the age of amusing motifs, too, despite the formality of the pattern, for leopards grinned at you in a most domesticated way, and laughing horses that were almost as flat in drawing as the old Persian ones, stood nose to nose. The date palm and the pine from India were often the center of a motif surrounded by animals and foliage just as they had been for centuries.

As a sort of trade-mark, proof that these were fabrics from Palermo, spots of lustrous gold thread were always introduced. Flacandus, writing late in the twelfth century, de-

scribed some of the elaborate textiles from the Hotel de Tiraz commenting on "the celebrated workshop in which silk is spun into different colored threads." "Here fabrics are ornamented with a circular design, requiring for this reason great skill and a high price. There are also numerous ornamental patterns of various kinds and colours, woven in gold and silk threads."

Probably the most famous textiles turned out at the Hotel de Tiraz in Palermo were the coronation vestments used by the Holy Roman Emperors (those robes that some say were woven in Constantinople). Created early in the twelfth century they were worn by the ruling German Emperors until 1794. And today you can see them in all their splendor in a room set apart for them in the old Imperial Palace in Vienna. On these robes, heavily embroidered with gold, pearls, and other gems, can be seen the results of the two schools of training followed by the weavers of Palermo. The horizontal bandings of the coronation robe were inscribed with Latin and Arabic and the date of the weaving was computed according to the Mohammedan calendar. Symbolism was attached to some of the motifs for the lions springing on camels were indicative of power and government, and certainly faintly remindful of early Assyrian motifs. The eagle meant good fortune and riches. You may discover a certain Oriental quality, too, for the character of the lions and camels and the date palm standing between them are all suggestive of the east—pagan splendor on a vestment for a Christian emperor. In addition to this magnificent robe of purple-red silk there are the alb and the purple dalmatic which were also woven in Palermo, but later in the century. The white taffeta alb carries inscriptions in Latin and Arabic and griffins embroidered in gold.

Late in the twelfth century this island kingdom received even wider recognition after Constance, the heir to the Norman crown, married Henry VI, the German Emperor. Then

began the third phase of Sicilian fabrics, a style which lasted through the German regime and up to 1266. It was the time when many of those patterns were born which were perfected in the following centuries in Italy. Palermo flourished as a weaving center for rich fabrics in the prevailing mode. It was the era of fantastic figures and grotesque animals. The horizontal feeling was still evident, but there was much greater freedom in the pattern. They continued to make rondels with Arabic writing enclosing conventional birds and animals, but they were in the minority. The general form was ogival, suggested by the shape of the entire motif rather than by any boundary lines. Though the repeats were still horizontal that fact was often only discernible by the use of a different motif in the row above and below. The foliage was looser and more trailing, used as a definite part of the motif rather than as a background or a dividing line.

The swan was the favorite of this century quite driving the proud peacock out of style. Large eagles were combined with the real gold of the sun's rays, and hounds and geese were the basis for a *genre* motif. The animals were more amusing than ever and dogs played till their tongues hung out. Winged lions were so full of spirit that they were shown chasing their own tails—and biting them. Grotesques appeared, too, half-elephant-half-griffin, and four-legged monsters that were almost terrifying. A few of the Christian symbols were worked in now and again, evidently significant of a visit from the Crusaders. Heraldic emblems that were taken from the shields of the great and near-great were used without much regard for their meaning.

Under the Emperor Frederick II, another picturesque character with his defiance of papal authority, a revival of interest in all the arts and letters flourished—a breath of the Renaissance. As in Florence under the Medici rule, the artists and writers and craftsmen of Palermo were stimulated by this great emperor who was trying to make of his

island estate a magnificent court. Not many years later the destruction of wars began once more and Sicily fell into the hands of the French led by Charles of Anjou in 1266. That spelled finis to her hold on the textile industry, for factories were broken up and the weavers fled, most of them settling in Lucca in northern Italy.

Toward the end of Palermo's glory figures appeared, some in *genre* scenes, some with hunting motifs or castles, all quite without regard for comparative scale. The rays of the sun were very useful for they so adequately filled out any space, and at the same time could be rendered in real gold. With this greater diversity of pattern there came a stronger feeling of the west and the Oriental character gradually receded. The designs following the Gothic style had attained a freedom that not even the eastern craftsmen could control. But it must be conceded that a certain amount of symmetry still existed if these fabrics are compared with those of the succeeding centuries. Unfortunately with the trend toward naturalism there was also a certain inferiority in the drawing and less finesse in the weaving.

The wealthier Sicilians used silks in their homes, for many of their costumes, for all ceremonial robes and throws, and even for the decoration of the cold stern walls of their churches. Orphreys and borders for vestments with gold interwoven were made on special small looms, but otherwise they followed the methods inaugurated by the Mohammedans. In the twelfth century Palermo rivalled Byzantium in the making of regal embroideries heavy with gold. The splendid brocades and damasks sometimes travelled far, for Venetian merchant ships stopped frequently at Palermo. And they carried their priceless cargoes to all the ports of France and Germany, as well as to the countries of the eastern Mediterranean. The heavy brocades of Palermo had no rivals in all Europe at that time.

In coloring, dull blue, purple and red were predominant,

though it was not the hard red of Spain. The color quality was richer and deeper and more useful in combination with other subtle hues. Pale red was combined with yellow and dark blue, while purple and green were used for outlines. The trend was toward delicate color harmonies though one thirteenth century brocade had olive-green or mauve figures against a dull crimson background. Dark green and light green were harmoniously combined in one fabric, while in another gold lions and light blue foliage blended with a rich red ground. A conventional design in grey against a pale purple had the added richness of birds-heads and claws and shoulder tops woven in gold. Green hounds and geese held by golden chains were worked into a red background, while the border of roses was all white. Occasionally the whole animal or bird was of that famous gilt thread, but usually the gold was spotted in—sort of highlights as it were. Heads and claws were always gold and sometimes the chains that held them were softly shining. With so many nations trying to guide her destiny it is really astounding that any native style originated in Sicily, but her damasks and brocades and velvets were rich in design and color—worthy ancestors of the glorious fabrics that were to be created in the famous weaving centers of Italy.

CHAPTER XII

The Great Weaving Centers of Italy

IF IT is with regret that we leave Sicily fallen once more into alien hands, it is with keen delight that we turn to the great weaving centers of Italy. They mark the beginning of a new epoch, one quite as full of magnificent fabrics as were the eras of the wealthy caliphs of Islam and the magnificent Christian emperors in Constantinople. Back in the thirteenth century instead of being the united kingdom she is today Italy was a group of small states that seemed to be constantly at war with one another. But underneath there must have been a motivating spirit that bound them all together for one of the greatest periods in the world of art is Italian through and through. The art of the Renaissance is not the product of one state or another but the blending of them all into a perfect whole. Even though the name signifies a re-birth, it was that only in the sense that there was an awakened interest in all forms of art and learning which resulted in harmonizing together the styles already at hand according to esthetic principles. This new fashion spread far beyond Italy and had a lasting influence on many other countries, but none of them really added anything to it. The Renaissance always remained purely Italian.

But long before those days the weavers of Italy were busy at their looms, started so they say in the ninth century. During the succeeding three hundred years colonies of weavers gradually gathered together here and there and began the production of fine fabrics. It only needed the added impetus

of the expert weavers migrating from Palermo to start a great industry revolving. The marvelous textiles made in Italy from the thirteenth to the seventeenth century cannot all be lumped together, for despite an underlying similarity they represented so many different ideals. There was Venice for instance with all the riches of the Orient pouring into her markets. She was next door neighbor to Byzantium and so naturally reflected a stronger flavor of the East than any other section of Italy. Florence to many is the essence of the Renaissance, and therefore full of the spirit of classicism, while Lucca her early rival was partly Saracenic. Not that these cities were the only weaving centers, but they were outstanding and they lent their names to certain classes of fabrics. If there was only space and time we might delve into the differences between these well-known and more easily identifiable fabrics and those of Milan or Pisa or Sienna or Bologna, where there were also colonies of expert weavers.

Sericulture, which was not introduced until late in the eleventh century, was a decided help to Italy, for her craftsmen became quite as adept at this difficult task as the Chinese. By the thirteenth century the region of Lombardy had built up a reputation for fine silk, maintained up to the present incidentally, for a large quantity of silk comes even now from that section. Italy still holds a high place in the silk world, though the glory and the fame of her patterns and looms have passed on to other countries. The very earliest textiles made in Italy were woolen, but the celebrated fabrics were of pure silk, or of silk used in combination with other fibres. And it is those rich silken fabrics that are meant when we come upon references to their unequalled colors, the vibrant quality of their flowing designs and the technical perfection of their weaves. Many of them were commanded for ecclesiastical use, as the church has always been the dominating power in Italy. Popes and bishops and even lesser prelates all required handsome robes for their elaborate rituals.

Then there were the famous and wealthy families, each controlling their own domain, who had to have silks and velvets for their palaces, their gifts and for their costumes. It was another age of romance—and again the artists and the weavers were more than equal to their tasks. To study the arts of Italy through those centuries is like following a glorious adventure.

Everything worked just right for the advancement of weaving in Italy in the thirteenth century. Great commercial activity had started up due largely to the trips of the Crusaders to the Holy Land. The ships that carried them to the east came back laden with treasures which spurred the native merchants to establish their own trading centers in the Levant. Persia was busy with the Mongols, Byzantium was in a sorry plight due to the Crusaders, the force of advancing Mohammedanism had been checked, and Sicily had just been taken away from the Hohenstauffens by the French. It was a psychological time for the rise of Italy politically, commercially and artistically. All of her rivals had been awakened, many craftsmen had migrated to her shores, her own silk industry was growing, and her looms were ready for new ideas.

1

LUCCA

In northwestern Italy near the Mediterranean lies the city of Lucca which in the thirteenth and fourteenth centuries was one of the most famous city-states of Tuscany. By great valor she managed to maintain her independence through many trials, only to come to an ignominious end—she was bought by a lesser rival, the city-state of Pisa. Reading her political history is like reading a romantic fairy tale for she was bought, sold, traded, pawned, attacked, taken and

freed all by aspiring outsiders. But from 1160 to 1328 she was sufficiently powerful to hold her own and build up a lasting fame in the textile world. Her weavers were noted for their fine damasks, wondrous cloths of gold, and quaint brocades with religious subjects.

Weavers had been busy in Lucca since the ninth century, fashioning cloths of wool and linen. As soon as it had been possible to import raw silk from China or India or Asia Minor they had made fair progress in copying the silks of the Byzantine style. Doublets of birds and animals were drawn with a flatness reminiscent of the old Sassanian patterns. The lions and the griffins and the strange birds were all there, still in pairs and symmetrically arranged with or without a frame. Sometimes there were ogival bands more often suggested than actual. For anyone deeply interested in the silks of the twelfth and thirteenth centuries they are well described in the Inventory of the Roman Curia made in 1295. In that long list can be found not only the Lucchese silks and those from other weaving centers of Italy, but also mention of the rich damasks and brocades and embroideries from Byzantium and even from the Far East, for the gifts to the church came from the four corners of the earth.

It is at the end of the thirteenth century and the beginning of the next that we come upon the first real Lucchese designs. There was a leaning toward freedom, a trend away from outlining forms and the beginning of the transition from symbolism to naturalism. Certain authorities consider that this fresh impulse was inspired by Gothic art, while others find it entirely Oriental, supposedly reaching Lucca by way of Venice. Gothic art, though of tremendous importance architecturally, played a minor role in textile design. There are very few authentic Gothic motifs except the pomegranate which is labeled Gothic because it had a certain architectural quality, though it really came from Persia and its

fuller development was in Florence rather than in Lucca. Circular wheel-like discs remind one of the great wheel-windows in the Gothic cathedrals, but they may just as well have been inspired by the rondel with a bit of Saracenic tracery for the central motif. Another point of differentiation between these new patterns and those from Sicily was the introduction of lanceolate leaves, sharper and more clear-cut edges even on the flowers.

The weavers from Palermo mingled freely with the weavers of Lucca and their contrasting ideas of design soon blended together. They had not set about trying to be different, it just happened, and the fresh style that resulted was pleasing to all for it carried something that was familiar and something that was new and original. Those patterns were delightfully composite, for from Byzantium and Persia came the birds and animals *affronté*, in rondels or not. From China they borrowed the fanciful birds with exotic plumage, the dragon, the ever-popular cloud motif and the rays of light which filled spaces so neatly. Islam contributed waving bands or ribbons bearing Arabic writing and from the Gothic or feudal trend came the castles and heraldic emblems. The studied symmetry and conventionality which had governed textile design for so long was being slowly overpowered. The designers wanted action and vitality and it is that which bound all these varying motifs together to make such a pleasing ensemble.

In addition to these more familiar patterns there were all the religious subjects which were not so evident in the textiles from any other weaving center. Cherubs or angels floated in star-lit skies and whole scenes from the Scriptures were carefully worked out in regular repeats. Halos became quite as ordinary as stylized birds had been. Some symbolism was still manifest for the eagle and the chained dog were both representative of souls aspiring to Heaven, even though the eagle was fastened to a celestial cloud that

was absolutely Chinese in drawing and form. The sun's rays had come to be symbolic of the Sacrament or of a benediction. Those three motifs—the sun's rays, the dog and the eagle—were typical Lucchese designs. If there was no sun, then the spread wings of the eagle were so drawn as to give the appearance of rays of light. Sometimes the fierce aspect of a lion was almost lost in his great mane which was usually curled at the ends but still gave a radiating effect similar to that of the sun. One of the notable fabrics now in Perugia, that we know was woven in Lucca and dated 1304, was the papal dalmatic made for the burial robe of Pope Benedict XI. The pattern included pairs of animals between floral devices and some symbolic religious motifs combined with others which were obviously Chinese.

In addition to the damasks and brocades with religious themes many of the so-called Cologne bands were manufactured in Lucca. These narrow strips, made on small hand-looms, were used as orphreys and appliquéd to ecclesiastical robes. Figures of Christ, the Virgin or Saints were the central motifs which were always accompanied by inscriptions in Latin. Sacred symbols and delicate flowers completed the patterns. Woven of the purest silk and gold thread and enriched with embroidery they were small works of art and very costly. Because the more famous ones were made in Germany and Flanders the one name of Cologne bands has always been applied to them, though those made in Lucca and Sienna were quite as beautiful as those from the north.

When Lucchese patterns were at their best they included a great number of figures. Stags and harts and lions and trees with birds and Chinese clouds with the sun shining through were all mixed together congenially. In one damask of the early fourteenth century there was a dog chained to a boat which appeared to be propelled by an eagle of amazing proportions. Swans and ducks floated about peacefully in the surrounding water quite unconcerned. A new kind of

castle came into vogue about that time, more real than heraldic, for it had structure after the Gothic fashion, even to moats and drawbridges. On one brocade feudal castles alternated with a barking dog that was a bit the larger of the two motifs. There was also an ethereal hunter (he had only part of a body) about the same size as the dog, and a delightful tree which had been so trimmed that its shape was quite ogival.

Frequently the bodies of animals or human beings disappeared into bursting rays, in one brocade, for instance, a fierce lion pouncing on a gazelle apparently emerged from a radiating sun, so that he had only head and forefeet. A few of the designs showed a bit of solid ground under the animals and figures and castles, all of which tended toward greater stability. A damask made in the latter part of the century is well worth noting for it was entirely white, a favorite trick of the Lucchese weavers. The large birds that centered the design carried sprigs in their beaks after the fashion of their Sassanian forefathers, and around their necks were chains of gold which fastened them to clouds straight from a Chinese damask. The design was full of activity and the drawing remarkably free and easy.

The human figures were almost all of fourteenth century origin, whether they were romantic knights or nimbed saints. Appearing most often in the religious designs they were still flat in drawing but somewhat more realistic for they often had long flowing hair and their faces were usually made of white silk. This definite effort toward realism in representing the human figure is considered by some to be Lucca's outstanding contribution to textile design.

Practically all the patterns repeated horizontally and sometimes there were different kinds of birds or animals, not in pairs, set in alternate rows, not unlike those of Persia under the Mongol regime. One writer calls them "agitated animal patterns," which is really a rather good name, for as

you regard them steadily there appears to be a definite movement from side to side. The so-called "diasper patterns" were from the fourteenth century, too, though they carried on into the next. The motifs were usually small and set in horizontal rows, the distinction being one of weaving rather than design. The mechanical difference lay in the kinds of silk used, for the shiny pattern procured with an untwisted and glossy weft seemed raised against the dull and lustreless background of warp threads. The effect was always two-toned, really that of high-light and shadow, though at first they were made of one color only. Later two hues were used, especially red on green, and gold added for the head and feet of a bird, or for a spot on the wings.

During the glorious fourteenth century though Lucca suffered various set-backs (one of the most serious when Florence carried off a goodly number of her expert weavers) she kept on and reached her full importance, despite political troubles. Most of the fabrics made were brocades or damasks, many with extra touches of gold. There were even entirely gold brocaded patterns which stood out as though padded from a plain monotone background. The weavers also knew how to make *baudekins*, copied from those of Bagdad. Those designs were more symmetrical than the ones used on most of the contemporary silks, and many were studded with precious and semi-precious jewels. Gothic velvets were in high esteem, and though those of Venice and Genoa were usually ranked higher, Lucca was one of the first in Europe to weave velvet. A quantity of gold was combined with the richly piled silk to make the patterns doubly important. The Lucchese cloths of gold were famous the world over, even being worthy of mention in certain historical documents.

The colors were full of vitality. A white pattern against a red background was an early favorite, and later white and blue, and white on green, and then all white. Red was always

popular, especially in the fourteenth century when it served as a background for a polychromatic design. Gold animals were placed against a green satin ground or a yellow and white pattern on red and so on. One early diasper was made with green, white and gold against a faded raspberry ground, and another was henna, green and white on a ground of plain blue satin. Mauve or dull purple was the favorite for the ecclesiastical designs, wherein there was much gold thread and the finely woven or embroidered white silk faces.

The glory of Lucca passed on to Florence, and from the thirty thousand weavers registered in the city in the sixteenth century their numbers have by now been reduced to a mere handful of less than fifteen hundred. But the fame of the Lucchese fabrics did not pass overnight, and some important textiles were made there in the fifteenth century. There was, for instance, a brocaded chausable woven with many brilliant colors against a crimson background. The pattern of animals and birds and a vase of flowers was obviously a combination of the old style of Lucca with the new style of Florence. That outsiders continued to think these products important is evidenced by the record that in 1416 the Duke of Burgundy bought from a Lucchese merchant "material for a long gown of violet velvet brocaded with fine gold in a design of leaves and pomegranates."

2

FLORENCE

In the winding valley of the Arno lies the fair city of Florence, still the home of romance for all who like to re-live the days of the Renaissance. Back in the thirteenth century it was a battlemented town, rather dark and dour, stern looking without doubt, as a city needed to be in those days to maintain prestige. But in the golden days of the

Renaissance there was plenty of life and color, and from the master minds of her artists, poets, builders sprang works of art that are incomparable. For the most part they are still there for us to enjoy, the old feudal castles and the later and more magnificent palaces built for the ruling princes; the resplendent churches; the paintings to whose colors time has been so kind; the evidences of master craftsmen in the minor arts; and most important of all the spirit of Florence still lives.

Though it is her Renaissance fabrics that are notable we have to go back of that a bit to discover how they came to be. It is said that there was weaving in Florence as early as the fourth century though there is nothing to prove it authentically. But we do know that by the thirteenth century she was a prosperous and thriving city, almost completely controlled by guilds. Those bodies of craftsmen who had banded together as a means of protection during the difficult times of the Middle Ages rose to great power. Many of them lasted five or six hundred years and as a matter of fact, even today there isn't an old silversmith in Florence who won't tell you that his forefathers belonged to that famous guild. That amounts almost to an accolade for it indicates that they have been carrying on the traditions established so long ago by those master craftsmen of the Renaissance. Each guild had their own quarters for they were quite clannish and each guild had their own insignia. The device of the silk merchants was a red gate on a white field. So zealously did they protect their own interests that at one time they enforced a law which forbade any member of the silk or wool guild leaving the city of Florence without a permit.

The thirteenth and fourteenth centuries, as the proper forerunners of the great Renaissance, contributed a great deal to Florentine textile history. Even at that time the princes lived luxuriously in their dark and dreary palaces, in fact so elaborately did they dress that they incurred the

Pope's displeasure. In 1275 he gave orders forbidding the ladies to wear their pearls or their feathers, and gold and silver fringes were also taboo. Florence had great merchants, as well as expert craftsmen, and even the nobility were not above taking part in a successful commercial enterprise. Those wealthy Florentines were bankers, you will remember, sometimes called "the bankers of Europe." At a very early date they had discovered that a flourishing business and a good bank account go hand in hand, and we know that prosperity and happiness are the best foster-parents of art.

The early Florentine weavers had been busy largely with wool and linen, most of the patterns of conventional form with the pomegranate and floral motifs combined. Blue and white or red and white were the usual colors. When silk was introduced in the thirteenth century the weavers took to it quickly and in a very few years were adept at weaving the symmetrical patterns borrowed from the east. The raw silk was mostly imported for it was not until 1444 that the law was enforced which required every farmer to plant mulberry trees for the more rapid advancement of sericulture. The gold thread for the fine brocades came from Cyprus or Sicily, for there was little manufacturing of gold in Italy prior to the fifteenth century. One other product of pre-Renaissance Florence is noteworthy. They were leaders in dyes and there were more than two hundred dye-works in the city.

With the beginning of the fifteenth century came the early Renaissance which was almost entirely Florentine, and it is the artists of that era who must be credited with laying the strong foundation on which the true Renaissance was built. The end of the century was perhaps the height of this great artistic expression, which was to be the leading force for the next hundred years as well. The revival of interest in all the arts by all the people may account for the fact that each of the great artists could do so many things. They

were not content with being painters or sculptors or builders, they were all three. And they were often scientists or poets or mathematicians at the same time. So it was but as part of their daily task that they turned to textile design. It seems quite certain that many of the great Florentine patterns were designed by her favorite artists. Fortunately some of the cartoons made by Raphael and the Bellinis have been preserved. We wish that the others had been, too.

These new designs completed what the Gothic age had started—a definite turning away from the Orient. The patterns were all more plastic and though still symmetrical there was no connection between the new bold and vigorous floral forms and the conventional motifs of the East. Two important attributes of the early Renaissance fabrics with their formal dignity are the elongated S shape (still somewhat like our old friend the ogive) and the tremendously varied use of the pomegranate or artichoke.

The *pomegranate*, without which no design seemed complete, originated in Persia. It was transported by the Mohammedans to Constantinople and thence through Venice to Italy. As a design the Italian artists accepted it, though as a fruit it was unfamiliar. But it reminded them a bit of their own artichoke, so, as they continued to use it, it acquired more and more the appearance of a flowering artichoke. The original pomegranate had usually been drawn as a round ball with cusps holding it above and below. Under the Italians it was elongated and marked off with divisions more like a real artichoke. The top burst out into an amazing array of foliage, sometimes spiky little thistles and sometimes resembling a pineapple. Later on it even bore blossoms such as carnations or roses. Though it had been symbolic of Christian love in a few of the earliest religious patterns it ceased to have any significance in its more advanced days. It was merely a satisfactory basis from which to work out floral

patterns. The designers used it for brocades and damasks, but the greatest variety of treatment can be found in the gorgeous velvets of the fifteenth and sixteenth centuries.

The patterns were all full, for both the early Renaissance foliage and flowers were fairly heavy. The acanthus and the palmette came into favor after the explorations in southern Italy had revived interest in early Roman life and art. There were a few birds, but they were incidental and seldom the center of a pattern. By the middle of the fifteenth century all the animals were gone. One might say that if anything of the east lingered it was the feeling for rhythmic repeats and the radiation of pattern from a central motif.

Since 1315 when Florence had first taken away weavers from Lucca she had been steadily building up a good reputation for fine weaves and splendid patterns. By 1470 she was the acknowledged leader in silk weaving, but unfortunately that glory lasted only some sixty years for in 1530 Pope Clement VIII besieged the city, and from that day the textile arts began to decline. But long before that the Medici family, whose history is a history of the Renaissance, had come into power. They were all tremendously interested in the progress of things artistic but it is the era of Lorenzo the Magnificent (1448-1492) that merited the title of the Golden Age of Florence. He was a great patron of the arts, Michelangelo was one of his protégés and Botticelli was his favorite. Never did the looms of Florence turn out more stuffs than under his direction. Though he and his family were the rich bankers of the time it seems that the founder of the family had been an apothecary. When this ancient Medici acquired a coat of arms he set thereon eleven pills as significant of his profession. It is quite literally to that device that we owe the all-over dotted damasks that were the rage in the sixteenth century. But perhaps the better known emblem derived from those pills is the three balls of the money lenders. The Medici as

bankers were of course usurers, and from their family crest were taken three of the eleven pills to signify that here was a place where money might be had on good security.

The silk workers were thriving, too, and the edict which made all farmers plant mulberry trees marked the beginning of the boom. They were soon exporting to France and Flanders and even to England. But with all this increased business in silk the wool industry was keeping pace. At the end of the fifteenth century there were in the city of Florence some sixteen thousand engaged in producing silks, but there were over thirty thousand in wool. These clever craftsmen were also familiar with printing, for there is a book dated 1400 written by Cennini which gives designs and details for cutting blocks and printing with them. One chapter is headed "The Way to Execute Paintings on Cloth with the Block." Apparently none of those early Florentine prints have been preserved, but we are slightly more fortunate with those of Genoa which are even more interesting.

With the height of the Renaissance came a dramatization of the patterns already established. The forms were all bolder and stronger and more naturalistic. The designs were extended and made more impressive, though less stiff than those of even the preceding era. Some of the repeats on the brocaded velvets were as much as 48" long on a fabric that was only 22" wide. With the introduction of larger designs better drawing was required and more time had to be spent on their perfection. At about that same time started a style which is sometimes considered as pure French—the placing of a fine pattern within the outlines of the flower or leaf forms which were featured. The lace designs, too, were extremely popular about 1500.

One of the most important motifs in Renaissance design was the vase which formed a center or basis for a wide spreading floral pattern. Originally it was conceived to hold the artichoke but it soon achieved such great popularity that

the artichoke or pomegranate was quite lost sight of. The sixteenth century artists used it to hold enormous bouquets of great variety and it typified the high Renaissance as the pomegranate had the early Renaissance. Filled with every kind of fruit or flowers it varied in shape from a low urn to the handsomely gadrooned vase of the later Renaissance. The royal crown, too, was occasionally worked in decoratively with a spreading bouquet of flowers. It was usually suspended amid the blossoms, some going through it, and others apparently holding it up. Though these larger motifs were always centered, some of the velvets were one-sided. But when two or more strips were joined together the old sweeping serpentine that formed elongated ovals were noticeable.

In the sixteenth century side by side with those beautifully bold designs a vogue was started for small *semé* or powdered motifs on the brocades and velvets used for dresses. The ladies wanted something different—they didn't want their frocks to match their furniture and walls—and besides those large designs were not exactly suited to the mode. So the fine scattered patterns that add decorative interest to so many Renaissance paintings came into being. Nowhere better than in the marvelous pictures made in those two hundred years can we see the variety and beauty of the textiles created. The artists loved to include them in their paintings, and when they were not there rightly as costumes or necessary decoration, they just put them in anyway—a piece of brocade hanging over a chair or a full curtain back of the subject, even when there was no rhyme or reason for its being there. Raphael especially was able to catch with his brush the full color and pageantry of the Renaissance and preserve it for us.

The expert Florentine weavers could contrive almost any fabric and they evidently enjoyed testing their skill on a combination of weaves. Many of the most beautiful silks

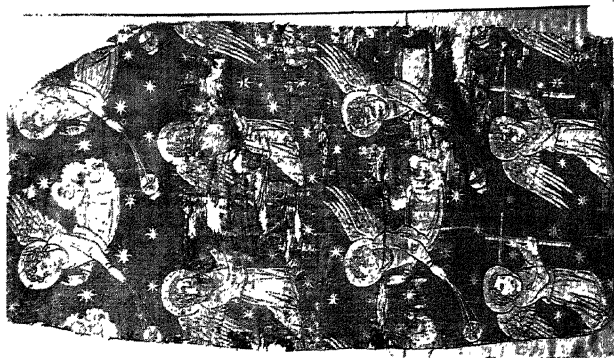


PLATE 17. *Left.* One of the religious fabrics from fourteenth century Lucca. The angels with white silk faces are brocaded in gold against a grayish violet satin. Note the Chinese cloud motif bordering their robes.

Courtesy Musée Historique des Tissus, Lyon.

Right. This Cologne band, dated 1497, elaborately woven and embroidered with gold, was used on a cope of blue ciselé velvet.

Courtesy Musée Historique des Tissus, Lyon.

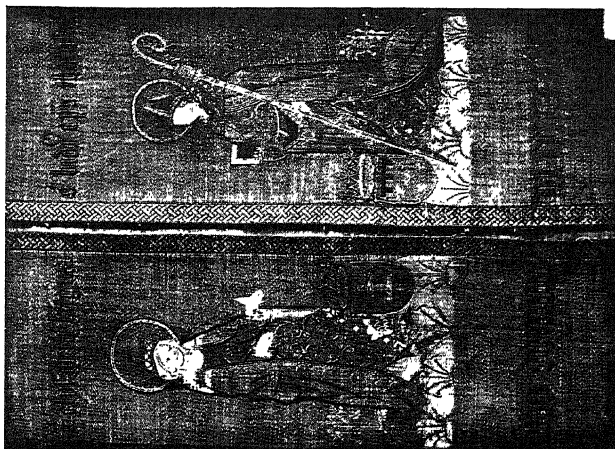




PLATE 18. An Italian brocade of the thirteenth century with the typical doublet pattern. Spots of gold stand out against the mellowed rose pattern.

Courtesy Museum of Fine Arts, Boston.

had a splendid damask background over which the main design had been brocaded. They made satin brocades, too, and brocaded velvets combined with gold, and bouclé velvets comparable to those of Genoa and Venice. It is said that the first velvets were discovered by the Velutti family of Florence, but that seems to be just a pretty story to account for the name, for pile fabrics had been known hundreds of years before the Renaissance. Many of their all silk cloths the weavers designated as brocatelles because of the boldness and weight of the pattern, though not true to type in the weave. And not to be outdone by rivals, they made orphrey webs quite as elegant as those of the Germans.

The old Florentines had need of all those rich fabrics, not only for the church but for their homes as well. The Renaissance palaces seem pretty draughty and cold but when they were really lived in the walls were hung with gorgeous and colorful tapestries. The floors were covered with priceless rugs from the Orient and the doors and windows were protected by heavy damasks and brocades. The rooms were then full of color and vitality. The furniture was classical in line, dark and heavy, but beautifully carved. The weavers were sometimes put to it to equal the fine work of the furniture makers, for the products of the one helped to show off the artistry of the other. Chairs were upholstered with velvets or damasks of green or red or blue. Now and then they preferred the multi-colored needlework or the ornate tooled leather that is still dear to the Florentine's heart. Cushions of velvet were trimmed with elaborate fringe or galloon and long gilt tassels. The beds were almost as magnificent as those from Spain, whether they were of carved wood or covered with decorated leather. High canopies needed long curtains and the fashion for gorgeous bed covers tested the originality of even a master weaver.

But none of those rich fabrics would have been half so effective if rendered in dull or unpleasing colors. If the

background of the velvet was gold, as it so often was, the pattern was in ruby red, or a lucent sapphire blue, or a purple that reflected light like an amethyst. The damasks were cream or white and over-brocaded in greens, reds, pinks and blues, all lively colors beautifully blended together. Those were the outstanding color schemes though there were hundreds of others nearly all of which somewhere contained the famous Renaissance red, which is such a pure color. Many of the later brocades showed a preponderance of pink, and the small patterns used for costumes were usually dark against a light background. Where the handsome textiles woven for ecclesiastical vestments have been preserved in church treasuries they are still as brilliant and beautiful as when they were made.

What an age for romance, for color, for pageantry, and for luxury. Italy was the center geographically and artistically of this new world, and she merited her place in the sun. She had established sound commercial enterprises, she had rich and beautiful cities, wealthy men who were patrons of the arts, and above all the artists and craftsmen who could fulfill their desires. To have lived then or to re-live those days by way of books and pictures and fabrics seems a dream come true.

CHAPTER XIII

The Great Weaving Centers of Italy

(Continued)

3

VENICE

VENICE in historic interest and romance holds a unique place. There is no other city just like her anywhere in the world, so it is only natural that her history should be dramatic and chaotic, but never for a minute drab or uninteresting. Wars have encircled her but never brought ruin, leaders have come and gone, but Venice has maintained her prestige. After all a city built on man-made islands with canals for highways and boats for public and private conveyances is bound to be different. She has always seemed to belong more to the east than the west and from as early as the eighth century was closely allied with Byzantium. There was even a special quarter set aside for the Venetians in that imperial capital. Their close and harmonious relations were further cemented by the marriage of the daughter of one of the emperors in Constantinople to a powerful Doge of Venice.

From her earliest history she was reckoned an important sea-port, and because of her strategic situation she controlled trade routes to the East for many years. If they followed the tedious overland route from Constantinople or if they came by sea, it was in Venice that the merchants all fore-

gathered. Her ships were numerous, her sailors the most proficient, and she guarded the monopoly of the sailing trade to the Levant with infinite care. The route of the Crusaders to the Holy Land was under Venetian control, and as a result of the first three Crusades she acquired commercial privileges in many of the centers where the wondrous products of China and the Far East were brought for barter. Venice set up her own quarters in some of these foreign cities and the sly trading that went on there is the basis for many a romantic tale. Her commerce grew to such an extent that not only her greatest rival, Genoa, was jealous of her progress, but finally the imperial court turned a hostile eye in her direction.

With the sack of Constantinople by the Crusaders in 1204 Venice acquired additional sea-ports along the Mediterranean which gave her almost complete control of all the trade routes to the Near East. Rich in Byzantine art treasures and full of excellent examples of that exotic architecture, Venice took the lead in the new life of the thirteenth century. At the end of the fourteenth century when Genoa was finally subdued, Venice was left undisputed mistress of the Adriatic and of Levantine trade. She was the recognized mart for the exchange of goods and in her shops were to be found all the treasures of the East rubbing elbows with the products of native manufacture as well as those from France and Germany.

Of all the goods brought in for exchange fabrics were the most important. It is even told that the couriers following the great Charlemagne were tempted by the beauty of the lustrous silks and bought many handsome robes from the Venetian merchants. Vast quantities of rich carpets, wall hangings and heavy damasks and brocades were all imported from the East for the use of the luxury-loving aristocracy which was developing in Venice. During the Renaissance the lives and the pageants of those self-indulgent people were

quite as magnificent as those of early eastern potentates. Their palaces were full of rare fabrics, their walls covered with them, and their highly ornamented beds draped with them. On the occasion of a great fête the splendid wrought iron balconies which overlooked the canals were hung with stuffs of brilliant colors, heavy with gold. The boats and bridges, too, were bedecked, and with the lovely colored houses, the gay bits of garden to be seen in the background, and the changing colors of the ever-moving water, the whole city must have been a magnificent spectacle.

Venice was probably the first city in Italy to take up weaving, and it was not long before her looms were turning out lustrous satins and damasks that were fair rivals to those of the east. By the year 1200 she was reckoned an important textile center and by the middle of that century the weavers had a corporation of their own and statutes as to the grade of work that must be done. The fabrics which were made savored more of the east than of Italy for the city was thoroughly impregnated with the charm and quality of Oriental design. The traditions of the east were carried on and sometimes superimposed on those of Italian heritage. Both Persian and Chinese influences are readily discernible in the early patterns. The intricate interlacing, the delicate tracery, the finely modeled scrolls were all of eastern origin. Where birds or animals were used they were a bit freer than the formal Saracenic patterns of Sicily and had a slight European aspect, even as early as the thirteenth century. The true Venetian design which finally resulted was a blend of east and west, a mixture, almost confusion, that is charming and at the same time reflective of the two opposing forces, each struggling for supremacy.

Marco Polo, returning to Venice in 1295, was largely responsible for a renewed interest in things Chinese. This great medieval traveler who had started out in 1270 brought back with him to his native city not only countless tales of the

glories of the East but many of their fabrics with which to corroborate his statements. You will recall that he and his father presented themselves in such soiled and disreputable looking garments that they had great difficulty in establishing their identity. But when they produced handfuls of gems, and costumes of great magnificence they were welcomed enthusiastically. He has never made it quite clear just where they carried or hid all those jewels and the many changes of raiment, but that they brought them is undoubtedly true to judge by the impression they finally made on all their townsfolk. After that it is easy to understand why the Venetians took a new interest in the textiles from the Orient.

Early in the fourteenth century another outside event had its effect on Venetian textiles. About thirty-five families of the weavers who had fled from Lucca when she was sacked decided to settle in Venice. One other account of this migration says that there were as many as three hundred spinners and dyers and weavers who all flocked to Venice. Whatever the exact number they were sufficient to register their ideas on the Venetians, and blend their patterns and their weaves with those so strongly Oriental. Some authorities believe that many of the fabrics which have been credited to Palermo because of their Oriental character were in reality made in northern Italy.

With such an array of outside influences Venetian designs were necessarily composite, though always with a strong tang of the Orient. From the Chinese they borrowed the placement of pattern which gave a diagonal effect, flowers rendered in a freer manner, the famous cloud motif, and the imperial phoenix with its resplendent tail and long talons. In contrast to this freedom which they liked in the fabrics of the East there was the symmetry and set quality of the patterns from Persia. They copied the palmette and tulip and even introduced the Persian archer with his bow and arrow. The badges and heraldic devices might be credited to inter-

est in the Crusaders, but the ogive had come to them from all their neighbors. The Gothic influence of the thirteenth and fourteenth centuries was particularly strong in Venice. The weavers found appealing designs in the stained glass windows and the wrought iron work which were well suited to the cut velvets and satins then coming into vogue. Delicately scrolling vines of Chinese character gradually gave way to trees with gnarled branches, for all the Gothic forms were heavier and more structural. Is it any wonder that it was a confusion of ornament and an elaboration of design which made those Venetian fabrics so distinctive?

But it was in the fifteenth century that Venice scaled the heights. Her superb laces were exported to all the places where their richness and exquisite quality were appreciated. Even today they still follow the same methods, and nimble fingers still fly in and out with threads as fine as spider's webs, making the world famous laces. The beautiful glass, so fragile and so lovely, is still made with the same skill, and just as much appreciated today as it was in the fifteenth century. Fine table linens were woven and embroidered by the expert workers, many of the sheerest and loveliest being sent to France for royal use.

Nothing gives a more accurate picture of the luxurious life of the Renaissance than the fine paintings of the contemporary artists. There you can see the fabric hung walls and the sheer cloths on beautifully carved tables set with fine glass and silver. You can find the equally splendid tissues made for use on the altars of the splendid churches, and also the elegant robes with which the leaders of the church maintained the prestige of their offices. Study the portraits and you will see the different patterns which were used for costumes, the rich silks and embroideries that were combined with them, and above all the sheer and marvelously patterned laces which filled in at throat and wrists. As that was the hey-day of the pictorial artist you can almost feel the

real quality of the heavy silks and the lustrous smoothness of the fine velvets.

Venice reached the peak and, as no one can hold that place long, it was at the end of the fifteenth century that her commercial enterprises began to lessen. The discovery of a short route to India in 1486 put a good deal of trade into the hands of the Portuguese, the Dutch and the English. The Venetians, who had never sent their ships beyond the Mediterranean shores, lost their supremacy, and the cutting off of commerce with India and China was a death blow to the naval traders of Venice. She could no longer dictate as to how and with whom the countries of the east should trade. Always maintaining her dignity, however, she slipped from first place so gradually that there was nothing catastrophic about it. One interesting detail of the end of that century can be found in the records of the city. In 1490 the Senate thought so highly of Venetian silks that they forbade the importation of any from the Orient. This was done ostensibly because Venetian silks were so superior, but there is not much doubt that it was also done to try to build up a greater commerce at home, when they saw trade slipping through their fingers.

By the middle of the fifteenth century most of the excited movement in the designs had disappeared and equilibrium had been restored. The velvet weavers had found that animal forms were not adapted to their special technique so they gladly discarded them in favor of flowers. Some few Gothic motifs still lingered in the damasks and brocades, especially the dogs, falcons, and the deer that could be drawn so delicately.

Bellini belongs to that century and he knew just how to achieve that great intricacy of pattern which the Venetians loved so dearly. His sketch book is even now in the Louvre in Paris wherein you may see the beginnings of many patterns for textiles. He was particularly interested in the

weaver's art and worked over the introduction of small landscapes.

Even after Venice's foreign trade had been curtailed the weavers continued to make beautiful damasks, brocades, taffetas and velvets and many think that the sixteenth century products are vastly superior to those of any other city. Her cloths of gold and silver were considered the finest in the world. The Doges even boasted that their weavers were better than those of Florence and that their textile exports exceeded those of any rival city. The patterns were all somewhat bolder and fuller and stood out more definitely from the background in large repeats. The likeness of these rich fabrics, especially the velvets, to those of Asia Minor is important, for often it is quite impossible to determine just where certain pieces were made.

The ogival form was ever-present and Venice is credited with starting the lop-sided patterns which have already been mentioned as a Florentine product. Those long sinuous S scrolls were ideally suited to the Venetian velvets with their backgrounds of *drap d'or*. Pseudo-Arabic characters appeared now and again although the sixteenth century fabrics were almost purely Renaissance in character. The vase had been introduced and, as in Florence, had achieved remarkable popularity. The Renaissance crown of heraldic heritage was included in some of the fine Venetian designs, where it was often placed at the intersection of floral or ribbon bands that marked ogives. The same use of the crown was made in the velvets from Asia Minor.

Though the great glory of Venice passed with the Renaissance her weavers continued to produce worthy fabrics in the prevailing modes. In the seventeenth and eighteenth centuries her baroque patterns were quite as elaborate as those of France. And many a Venetian damask or brocade could be found on a French chair or sofa of that era. The foliage

was full and the lace motifs delicate, the colors quite as delightful as those of France. Delicately tinted floral sprays with silver shaded petals were set on a background of deep yellow satin in one rare piece made in the early eighteenth century.

The weavers were familiar with all the fibres and all the weaves, and nothing was too difficult for them. From the quantities of rich brocades that had been exported to Venice in the early days they had studied the technique as well as the patterns. The silk that they used was mostly grown in Tuscany, though formerly it had come from the East. A new type of gold cloth was developed from an eastern model in which the pattern stood out in gold against a crimson background. As this weave was more effective with figures than flowers most of the subjects were ecclesiastical and included figures of saints and angels and even stories from the Bible. Some were as definitely pictorial as the primitive Italian paintings.

The orphreys woven in Venice were a bit different from those of Germany in the technique of weaving as well as in the colors used. Against a crimson background the figures of gold or heavy yellow silk stood out boldly. Though the more famous Venetian fabrics were all of silk the weavers manufactured the sheerest of linens and cottons, too. Some think that they may have been the first to weave cotton for it is believed that that fibre was not introduced into southern Europe until the thirteenth century. A record of 1320 indicates that there was a steady trade in cotton between Venice and Ulm.

Venice was especially famous for her velvets whether large and vigorous in design or small and intricately patterned so as to be suitable for costumes. A guild of velvet weavers had been established in 1347, and in 1421 two different classes were registered, those who made only plain

fabrics and those who could weave patterns. Subsequently they specialized even more for there were as many as five classes reported in 1452, each expert in their own line. They are credited with most of the handsome *ferronnerie* velvets, though other cities also manufactured them. The pattern always resembled iron work and looked as though it might have been cut out of the velvet with an etching tool. The designs, really line drawings, were simple, usually ogival and framing pomegranates and thistles. The fabric itself was particularly luminous and had a jewel-like quality which was enhanced by the colors, ruby red or emerald green. Though some of them were used for costumes they were most often made up into vestments where the contrast of elaborately brocaded orphreys made the velvets seem even more lustrous. Nothing can quite equal those splendid *ferronnerie* velvets, and even our clever modern artisans have never been able to get the same effect.

Lastly we come to the colors of these magnificent fabrics. The early velvets were nearly always ruby red against a background of cloth of gold. The most popular hues of the fifteenth and sixteenth centuries were crimson or maroon, amaranth, violet, indigo and turquoise blue, green, pale blue or grey and the real gold or the gold silk that was used in its place. Multi-colored floral sprays were made with damask backgrounds in which silver and gold was interwoven. One sixteenth century textile had a palmette pattern in silver bordered with blue, while the background was crimson satin. A brocatelle of the same age had red silk warp threads, golden yellow weft, and silver threads interwoven. In one baroque design the florescent pattern had foliage of many tones of green, flowers of dull pink, and bits of blue, all against a white damask background. It would be difficult to find anything more charming in color harmony than those fabrics of Venice where the subtlety of the East prevailed.

GENOA

Last of these great weaving centers of Italy is Genoa, perhaps not quite so famous for so long a time as the others, but well deserving of special mention. Like Venice she has always been a famous sea-port and her history goes back to the days when Greece had a small colony there, and later the Romans who left definite traces of their stay in 216 B.C. And also like her rival across the peninsula Genoa saw and secured the advantage of trade with the east in the Middle Ages. The Crusades helped her almost as much as they did Venice, for she, too, established communities in many of the foreign ports of the Levant and the Black Sea. Her commercial success was less than that of Venice largely because so much time and money was expended with internal wrangling. Always at war at home or with her neighbors there was less interest and less power to be devoted to building up commerce which might have equalled that of Venice. The Renaissance history of Genoa is much like that of her neighboring city-states—wars, religious disturbances, and prisoners taken by the one momentarily triumphant. All that meant a continual evolution.

Despite constant turmoil Genoa was a great weaving center and two most famous fabrics still carry her name—the *velours de Gênes* which were so popular in the sixteenth and seventeenth centuries and the *toiles de Gênes*, the gaily printed cottons of the eighteenth century. The term Genoese has come to be applied to all velvets of the style favored in Genoa whether they were made there or elsewhere. As has been frequently pointed out, with the interchange of weavers and fabrics between cities it is sometimes exceedingly difficult to determine exactly where a certain fabric may have been woven. In most instances it seems wise to credit it to the

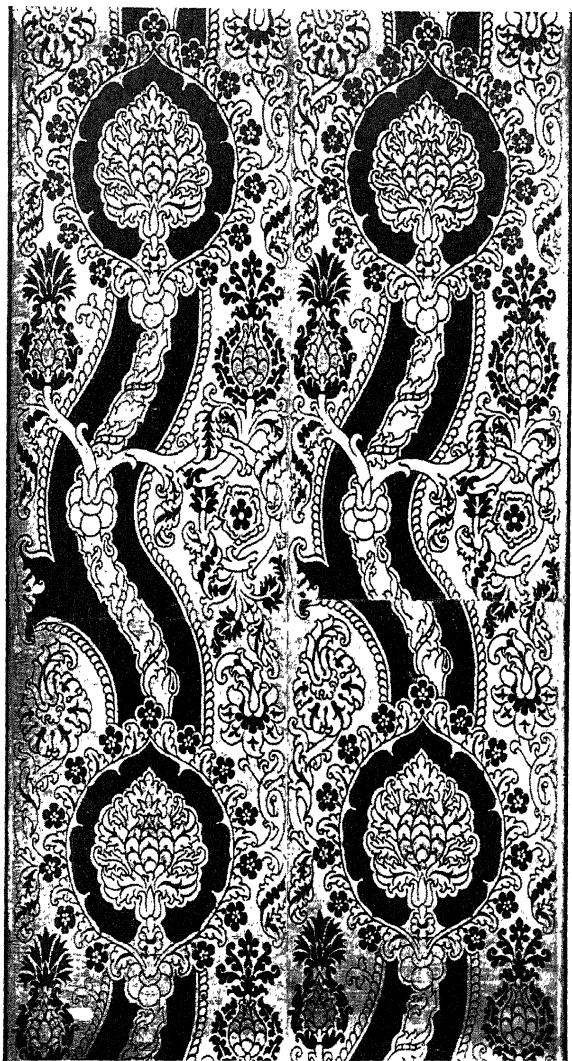


PLATE 19. One of the gorgeous Italian velvets of the late fifteenth century. The wide sweeping scrolls and artichoke pattern have been designed in gold bouclé and red velvet against a flat gold background.

Courtesy Victoria and Albert Museum, London.

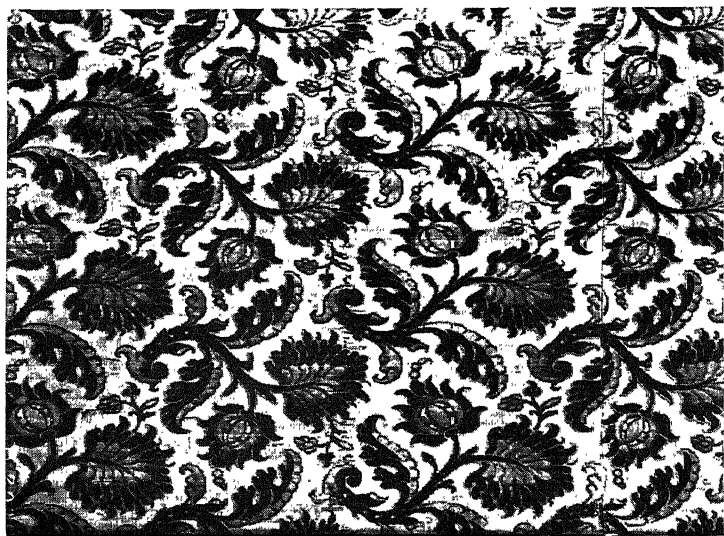
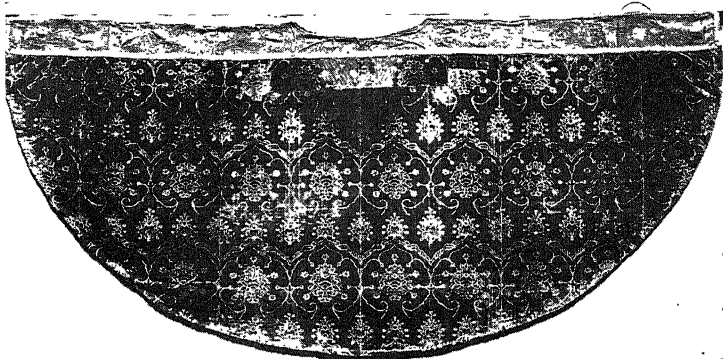


PLATE 20. *Top.* A splendid fifteenth century *ferronnerie* velvet cope from Italy. The pomegranate motif shows in etched detail.

Courtesy Museum of Fine Arts, Boston.

Bottom. A Venetian costume velvet of the sixteenth century. The small motif repeats in blue and fawn on a silver background.

Courtesy Museum of Fine Arts, Boston.

center where that particular type of design or weaving originated. Consequently, the handsome velvets that we term Genoese may have been woven in Milan or Florence or Venice.

The finest Genoese textiles, especially the velvets that were so justly famous, belong to the fifteenth and sixteenth centuries. The large scale patterns in vogue at that time were better adapted to velvet with a background of satin or cloth of gold than to the flat all-silk textures. Several new and different types of weaving had been conceived. For one the velvet pile was cut in different heights so that the pattern of cut pile stood out from a background of a lower cut pile. Or sometimes the two different heights of pile made a shaded pattern against a satin background or one of plain cloth of gold. Another style was made so that long loops of gold thread (*bouclé*) formed the pomegranate or serpentine pattern. A gold *bouclé* design against a jewel-like velvet background was an enchanting combination. When the pattern was all of velvet with part of the pile cut and part left as loops it was called *ciselé*. With this simple difference in structure remarkable effects of light and shade could be achieved.

The early fifteenth century designs were formal and very impressive with their sinuous sweeping lines, often giving the effect of an elongated S. The repeats were very large, one motif filling the entire width of the fabric, usually only 22", and often from 30" to 40" long. The Florentine pomegranate continued in favor, but very often it had a bit of lattice or lace behind it and sometimes fluttering ribbons around it. There seemed to be just a trace of a feminine influence in the patterns, a precursor of France perhaps. Later in the century the Genoese made use of the crown motif, which they also borrowed from Florence.

Genoa was at her best in the sixteenth century and the lovely *velours de Gênes* carried on the Renaissance tradi-

tions. The velvets that are usually included in this classification have a satin or silk poplin background lighter in value than the design which is of two heights of pile or of cut and uncut velvet (*ciselé*). Some of the patterns were quite like those of Florence and Venice, but a nice quality of shading was achieved by the differences in pile. They used the pomegranate and the Renaissance vase, too, and always a splendid array of flowers. The carnation and the hyacinth, really borrowed from contemporary Ottoman silks and velvets, were new favorites. Sometimes when the flower patterns were especially decorative and colorful and the leafage naturalistic the velvets were called *jardinière*. The drawing of the original design may have been quite flat, but splendid high-lights and shadows were created by the use of cut and uncut pile, or pile cut in different heights. The background of white, cream or *écru* satin was frequently interwoven with gold or silver. In addition to these wondrously flowered patterns they also made the famous *ferronnerie* velvets like those already described as Venetian. Those marvelously hued fabrics, with patterns so fine in line that they looked as though they had been engraved, were favored particularly for vestments.

Still a different type of design appeared in the fine velvets intended for costumes. They were made of two colors only, dark against a light background usually, though the reverse was in favor later in the century. The small all-over patterns were nicely balanced and carefully drawn. Some of them had birds or animals, but so tiny and so conventionalized that they bore no resemblance to the dominating birds and beasts of the previous centuries. One velvet made in the sixteenth century had a small all-over diaper of open rectangles which contained scroll-like sprays of conventional flowers. The black velvet of the pattern stood out in strong contrast to the faintly cream satin background. Another was dark blue on yellow and the *ciselé* pattern was exquisite in

the fineness of its execution. In this velvet as in many others of this class there was a diagonal repetition which made a movement from left to right.

While velvets were the most highly prized the weavers were quite as adept with flat silks and brocatelles. The most successful was a bold red design which seemed to stand out from a gold or yellow satin background. The Cologne bands, too, of the finest silk were woven in Genoa for further ornamentation of handsome vestments. They also handled linens quite as well as the Venetians and their embroidery was of the same character. In Leonardo da Vinci's painting of *The Last Supper*,* which unfortunately has so faded into its background, you can see the type of table-cloth that was in use during the days of the Renaissance. Heavy blue thread was either embroidered on to form a border or interwoven to give the effect of embroidery. Quaint and naïve motifs of birds and animals, such as they still use on the famous Italian linens, made the conventional pattern. Cotton weaving, too, was known in Genoa and the spinning and weaving of it is practised even today in and around Milan.

That was the age of magnificent palaces which were decidedly more livable than the old feudal castles. When the walls were hung with fabrics it was for beauty rather than for protection. The furniture was solid in structure and classical in its sculpturesque ornamentation. Elaborately carved pieces of the sixteenth century were in the same spirit as the highly ornamented fabrics. *Jardinière* velvets were used for large chairs, as well as for hangings, but plain velvets or *semé* patterns were more satisfactory for the straight little chairs which required only a small piece for upholstering the seat. Deeply piled velvets decorated the beds and enhanced the wonderful carving that has been called "sculpture in wood." Costumes for the most part were dark but very rich in hue. Look again at the Renaissance paintings if you would see all

* Santa Maria della Grazie—Milan.

the varieties of velvet, and there are some that you can almost *feel*. The same ones are in the contemporary Dutch and Spanish paintings, too, for Genoese velvets traveled far afield. Bruges at one time acted as a sort of northern distributing center for the highly prized velvets of Genoa. The Flemish velvets and damasks were quite comparable to those of Italy, though not so easily distinguished as to pattern.

Lastly there is the fabric that was unique in Italy, the printed cotton that the Genoese called *mezzari* or *meseri*. They were really head shawls of Oriental character created originally for the women of Liguria. About six feet square they were small editions of the Indian *palampores*, printed in much the same way with wooden blocks. The wearing of a head shawl was not a new idea for handsome embroidered ones had been worn since the days of the Middle Ages. But the gaily colored cotton ones caught the popular fancy and their vogue even spread to Paris where they were sold as *toiles de Gênes*.

Their popularity can be credited to Michael Speich, a Swiss who started making them in 1787 in his little factory near Genoa. The cotton of which they were made he imported from Switzerland, and the patterns he borrowed from the *indiennes* which had flooded Italy as well as France. The tree of life, or the Garden of Paradise, was the usual decoration, but it was rendered in a more naturalistic manner than the true Indian ones. In addition to the familiar central motif of plants and birds and flowers, architectural details were sometimes included, perhaps a wall or a castle or even a boat. There was a naïve quality in their bright gay coloring which had not been inspired by the *palampores*. The background of the square was cream and the pattern printed with the whole range of colors then available. The style reached its peak about 1800 when the finest ones were made, but did not last very long after that, and the Speich factory, carried on by an Italian cousin, was finally closed



PLATE 21. A Genoese *jardinière* velvet of the sixteenth century. In this elaborate weave is included velvet, both cut and uncut, in realistic coloration and silver lamé combined with a cream-white background.

Courtesy Musée Historique des Tissus, Lyon.



MEISAO DE L'ERBÖ

Costume della Donna Del Popolo Genovese



PLATE 22. The lovely lady shows how the *mezzari* of hand-printed cotton were worn when they were the height of fashion in the nineteenth century.

Courtesy Museum of Fine Arts, Boston.

about 1850. But the fashion for wearing gay head shawls has never died out as is evident even today when one sees a group of peasant women of Northern Italy all dressed in their best with brightly colored kerchiefs on their heads.

The textiles of Italy developed and flowered at the same time and in the same way as her fine arts, and a native fashion was created which achieved great significance. The Renaissance fabrics were gorgeous in color and brilliantly conceived in design. Their influence was far reaching and most important in the evolution of the textile arts of France.

The French Renaissance

WHILE the artists and craftsmen of Italy were busy groping toward that final flower of artistic endeavor which was the Renaissance, France had built up a magnificent style of architecture. Despite the fact that the name Gothic was applied to it at first with scorn, it remains today as one of the leading contributions to the architecture of the world. But France was so busy creating imposing Gothic cathedrals and palaces that it was not until the fourteenth century that there was time to turn seriously to the arts of weaving.

During the Middle Ages about the only weaving that was done was that of the priests in the monasteries. They made a few of the textiles for use in the church though most of the better ones were imported from the east. Those handsome Byzantine and Sassanian silks were the ones which the clerical weavers utilized as models. Schools were started in conjunction with many of the monasteries though they specialized more in embroidery than in complex weaving. To the plain silks which they could make on their simple looms they added rich embroidery in gold and silver and precious stones.

That the people acquired a greater appreciation for fine textiles is due largely to the artistic stuffs that the returning Crusaders brought back from the Near East. Those Christian emissaries had looted all the rich cities in foreign lands and had carried away their most valuable treasures. They brought home not only the fabrics suitable for garments or

for hangings, but also the elaborate *baudekins* with their marvelous colorings combined with cloth of gold. At the same time they introduced the more luxurious ways of living which they had picked up from the Moslems. This new realization of grandeur left a definite impression on all the arts, but even so no effort was made at that time to reproduce the sumptuous fabrics.

Tapestry weavers were already at work in France as well as in Flanders (see Chapter XVI) and great skill in needlework had long been exhibited. As early as the middle of the thirteenth century a guild of dyers had been established with St. Maurice as their patron saint, but it is likely that most of their work was dyeing wool for tapestries rather than silk for shining robes. However, there is a record of a silk weaver's guild being formed in Paris in the same century which probably made *bourrettes*, those slightly rough silks with no lustre. The resplendent silks of heavy texture intended for ceremonial robes of both court and church were practically all imported from Sicily or Italy.

The richly ornamented buildings created by the Gothic architects needed colorful textiles to relieve the coldness of their lacelike decorations modeled in stone. Tapestries covered whole walls, even in the large assembly halls of the royal castles. Doorways and secret passages were thus easily concealed. An ancient recorder of medieval life in France intimated that those tapestries served more than a decorative purpose. He discovered that the walls were hung with them "to keep out the flies and spiders." The earliest designs that can be credited to France are all to be found in embroidery or tapestry rather than in the woven fabrics. Simple and naïve, they were mostly plant forms taken from the prevailing style in architecture.

Weaving did not get a really good start until Pope Clement V, moved from Rome (in 1309) and forced to live in Avignon, brought with him some of the exiled Italian

weavers. Of course the fabrics they produced were definitely Italian in weave and pattern, but appealing nevertheless to the taste of the French people. That Italian influence was difficult to overcome and it was not really until the seventeenth century that the textile designs were definitely and purely French. The products of the looms of Avignon are still in the markets of the world and the old water-wheels are still working in that fascinating street which is called "rue des Teinturiers." But greater fame has centered around her manufacture of madder, that element so essential to the making of certain dyes and pigments.

During the reign of Louis XI (1461-1483) silk weaving was introduced and small factories were set up at Lyons which were later removed to Tours. The weavers were those who had emigrated or escaped from Lucca or Florence or some other small town of northern Italy. One silk and gold fabric that is definitely ascribed to France in that period had the usual bold pattern familiar in Italy which included the crown and the serpentine lines forming a pointed oval. It is practically impossible after so many centuries to distinguish between the fabrics made in Italy and those made in France by the Italian weavers at the same time.

The picturesque age of the chateaux and the prodigality of the French kings greatly stimulated the art of weaving in the following centuries. Never have there been more regal courts, more gorgeous attire against richer backgrounds. In medieval days the chevaliers had worn scarlet while the kings were clad in royal purple, but the colors for the costumes of the ladies were unlimited. Red was used as a background more often than any other color and the strong contrast of pattern against background was an important characteristic.

Louis XII is often signalled out as the forerunner of the Renaissance in France, for after his visit to Italy he was filled

with an enthusiasm for this return to classicism which was sweeping aside all the previous styles. His reign certainly marks the wane of the Gothic era and the unrest that precedes a change. It is this king, whose fame is somewhat obscured by the magnificence of those who followed him, who invited Leonardo da Vinci to visit the French court.

Anne de Bretagne, his queen, was one of the first of the important French women who had such remarkable domination over the whole world of art. She, by the way, is credited with being the one who introduced the custom of wearing black for mourning. As ladies of the court always followed where the queen led, the looms of France as well as Italy must have been busy turning out black silk. But that was only a minor influence credited to her, for the celebrated Book of Hours made under her direction is worth much more attention. Each of the three hundred panels enclosed a flower, shrub or tree from the gardens of the Chateau de Blois. Butterflies and other small insects were also included in these miniature works of art. The development of these delicate designs led the trend in pattern making toward the inclusion of finely drawn details which is such a definite part of later French fabrics.

The patterns of Italy continued to be accepted though the vase of flowers became a bit finer when worked by French hands. The ogival frame gradually evolved into waving bands and the ever present crown was almost lost in a maze of foliage. Other motifs that found their way into textiles as well as into stone and wood carving were the royal insignia. Anne de Bretagne was represented by the ermine of Brittany and Louis XII by the porcupine. The salamander of Francis I peers at you from tapestries and laces as well as from stone parapets and chimney tops.

Francois I, the greatest of the Valois kings, was really an artist, fully appreciative of any artistic endeavor. The year

of his accession to the throne (1515) is usually the marker for the beginning of the French Renaissance. The art of this age, though basically Italian, had an exquisite grace and a light touch which differentiated it from that of the true Italian Renaissance. The French clung to their Gothic structures for some time, and even added the popular Italian details to them. The new style that finally evolved was definitely French, though its Italian heritage is readily discernible. The king had a brilliant court about him and the dreary castles of the previous centuries were soon replaced by fairy palaces full of color and light. His love of luxurious attire and all other charming and pleasurable things was a tremendous impetus to the artisans, especially the weavers. It was an age of exquisite elegance.

He brought back to France from Italy still more expert weavers, some that he had bought in Milan, some that had escaped from the oppressive rulers of the cities to join his armies. Many of them he settled in Lyons so that they might continue to weave the fine brocades and damasks which they had learned to make at home. He even granted a charter to the city, which was intended to make it easier for the foreign and native workmen to live together happily. In 1538 he allowed weavers from Genoa and Lucca to start up schools in addition to those already functioning under French direction. Lyons had developed into an importing center, too, and after 1540 all the fine silks coming into France from Italy or the East passed through her warehouses. There the weavers could see them and study them and so profit by the cleverness of the foreign designs and textures. Lyons seemed to have all the material advantages so essential to the handling of fine fabrics, but the looms and the yarn still had to be brought in from Italy. The king tried to grow mulberry trees in the valley of the Rhone so that sericulture might become another of France's industries. But there was

no success attached to that venture, and Lyons was content to import all the raw material needed. Tapestry looms were set up at Fontainebleau and weavers brought down from Flanders were put to work. (See Chapter XVI.)

Leonardo da Vinci spent his last days creating splendid works of art for this French king. Benvenuto Cellini, responding to a royal order, appeared at the court of France in 1540. Those two Italian artists were the dominating influence of their time and the classical ornamentation that Cellini favored became the style in France. Flowers were all important, either naturalistic or conventionalized. Animals and men that were more often grotesque than realistic grew out of flowering arabesques. The cartouche bearing princely insignia was woven into tapestries or into brocades for ceremonial robes. Scrolls that tended to be a little heavy were the forerunners of the later styles. The showily carved furniture carried the same motifs and on chair backs or wall panels the king's salamander was always discernible. There was a trend, too, toward realism though it was never allowed to interfere with elegance.

One picturesque event of the reign of Francois I has by its very name provided us with a vivid picture of the sumptuous fabrics of that day. The meeting on The Field of the Cloth of Gold (1520) established a record for splendor that has never been equalled. Henry VIII from England met the French king to attempt a settlement of the world's affairs. That the meeting took on more of the aspect of a tournament and a carnival combined was the result of the desire of each one to outdo the other. Gold must have been used in abundance to merit the name, though it is recorded authentically that most of the tents were resplendent with tapestries. The meeting of those two luxury-loving monarchs, each with an extensive retinue, was like a page from a medieval romance and must have been a sight well worth

seeing. This pageant of color and regal display marked the end of the Middle Ages. A new era in the realm of art was beginning.

Francois I's son who succeeded him merits recording here more because of the two marvelous women in his life than on account of any great thing he did himself. Henri II was Italian in spirit as was his queen, Catherine de' Medici, the last of the powerful line of Florentine rulers. But Diane de Poitiers, the lady to whom he gave his heart, was French to her finger tips. Where Catherine was heavy Diane was light. Where the Queen demanded superb velvets in the Italian manner, the favorite selected the finest and most exquisite of silks. It is the emblem of Diane and Henri that can be found interwoven in fine carving or in the tapestries which covered the walls of the chateaux where they lived. Three interlaced crescents were part of her crest and the entwined initials of H and D are more often found than those of H and C. There was a great deal of activity in building in those days, and the king gave to Diane the charming chateau at Anet, which was unfortunately almost entirely destroyed during the Revolution. Her keen interest in the furnishing of this new home led to the making of rare textiles of special design. And where she led the way others followed, for she was introducing a new fashion that was far more intriguing than the heavy style from Italy with which they had so long been familiar. Though all the looms of France were more than busy many of the more elaborate textiles were still imported from Italy.

It is Henri IV, that Huguenot king of Navarre who married the daughter of Henri II and Catherine de' Medici, who was the next adventurer in the field of textile making. All the arts and crafts progressed steadily during his reign for at last there was religious peace and Catholic and Protestant could work side by side without apprehension. He came to the throne when the country was in a bad state due to

religious wars, and he had a grand vision for economic improvement. One of his first acts was to better the living and working conditions of the weavers housed within the Louvre. He was particularly interested in the promotion of the silk industry for he was anxious to equal the products of Italy and so be able to exclude them. He succeeded beyond his dreams for by the end of the sixteenth century weaving was one of the greatest industries of France and over twelve thousands looms were in operation in Lyons alone. Where sericulture had failed before, when King Henri IV tried it he was victorious. His own garden was open to artisans as well as to scientists and it was there that the king worked out the successful methods for growing mulberry trees and breeding silk worms.

Claude Dagon is a man to whom too little credit has been given, for without him Henri IV could not have achieved such industrial and artistic progress in the world of textiles. It is not known exactly when he was born in Lyons, but he was a grown man and a master weaver when he was first brought to the king's notice in 1605. As a means of spurring on native weavers the king had excluded all foreign fabrics in 1598, but soon realized that the industry needed outside and competitive stimulation, so two years later the ban was revoked. He then encouraged schools and one was started in Paris and another in Lyons. Dagon was at that time presented to the king as the man who could direct such an undertaking successfully, that he himself knew how to weave all the fabrics—even like those of Turkey and Italy. He had a remarkably clever technique and his improvements of looms which were introduced at that time were followed until the invention of Jacquard superseded all others in 1801.

After the king had approved the fabrics Dagon submitted he was given a royal grant and instructions to set up looms in Lyons and teach apprentices as rapidly as possible.

One chronicle of that age records it as a special accomplishment that he could weave a "velvet of eight colors," and that with a background of gold and silver. His designs were at first all exact copies of the fabrics imported from Italy for he was granted a small room next to the *duane* where he might study all the stuffs that came in. Unfortunately after his very earliest products he discontinued the practise of signing name and date to his textiles. Hence it is not known exactly which of those made in the early seventeenth century are his.

Like all great geniuses he was constantly in trouble and many court records of the city of Lyons are cluttered with the petty wrangles between him and his jealous contemporaries. He was a tireless worker and trained an enormous number of apprentices. In 1611 when he had an audience with the Queen Regent he exhibited twenty-five different kinds of stuff that he could weave including satins, taffetas (in many colors), damasks, brocatelles, cloths of gold and silver, velvets of all varieties, and "satins with fruit, flowers and leaves," and others like those of the Chinese "called flowers of India." It is undoubtedly due to his inspiration that the French fabrics of the early seventeenth century made such amazing progress.

Then came another king strongly influenced by women. Louis XIII was but nine years old when he succeeded to the throne of France after the so needless murder of the great Henri IV. In consequence his mother, Marie de' Medici, another Italian, became the regent. She was quite as persistent in her favor of all things from her native country as her distant cousin Catherine had been. But in a few years there was opposed to her influence that of the new queen, Anne d'Autriche, who having come from Spain, preferred all Spanish tendencies as well as products. With these two counter currents within the court a true French style was slowly evolving which came into bloom about 1620. Vouet,

the court painter and master of Le Brun, started a new French school of art based on the Renaissance. Despite his long study in Italy he put a new meaning into all designs and for the first time French art surpassed that of Italy. The outside domination had been overcome and there was greater freedom in design and in drawing. The baroque art of France was established.

One identifying mark of that age is the great dignity of the fabric designs. The pointed oval was still sometimes formed by waving bands of lace which converged, and the pomegranate crept in time and again, though it was finally almost swamped in the wealth of new detail which appeared. There was a definite vertical effect which was frequently emphasized by nicely spaced stripes. Garlands of fat pears and apples were fairly realistic while the same pattern might include corpulent looking vases and chubby figures. Cornucopias spilled fruit or flowers with a realism that foreshadowed the rococo style of the next century. Flowers were used everywhere, as part of a spreading design, or small ones were scattered over a whole pattern. The style of the costumes of the day led to the use of many small *semé* patterns.

The employment of lace motifs was truly French baroque, the first suggestion of intentionally unreal representation. Leaves or flowers or fruit were filled with designs copied from the real laces which had such tremendous influence on textile design. The crown, vase and *fleur-de-lis* were also important motifs of this period. This lily, as the official insignia of France, goes back to Clovis the Frankish king, representing, according to tradition, a lily handed to him by an angel at the time of his baptism. As the emblem of France it expresses the full appreciation of the French people for grace and beauty with just a touch of formality.

The founding of the Savonnerie factory is sometimes accredited to Henri IV but it was not until 1627 that the two tapestry weavers, Duport and Lourdet, were given a royal

grant to make in the Louvre "carpets in the style of the Orient, with gold and silver." Four years later they moved their plant to Chaillot and occupied a building that had formerly been a soap factory. Hence the name "Savonnerie" which has always been applied to the products of that factory. Their carpets were neither those of the Orient nor yet were they tapestries, as many call them. They were made with a pile but the patterns were similar to those employed in the making of the fine tapestries of the seventeenth and eighteenth centuries.

The furniture of the early seventeenth century like that of other countries was heavy and solid but highly ornamental. The new trend was toward the style of the Flemish rather than that of Italy. Velvets and leather were used for upholstery and gold gimp and fringe added further glittering decoration. Brocades and tapestries reflected the same spirit regardless of the difference in texture. Deep swags, harmonious colors, fine needlework in brilliant hues, extremely complicated ornament, were all part of the gorgeous display. A yellow and white damask with a blue-green chenille pattern is one of the handsomest fabrics of this era, and another with a salmon pink background recalls the Italian silks for its pattern is many tones of green with silver interwoven. As a commentary on the elaborate style of living then in vogue, it is amusing to recall that the famous Cardinal Richelieu decorated his new palace so gorgeously and so charmingly that the king coveted it and the Cardinal was forced to make him a present of it.

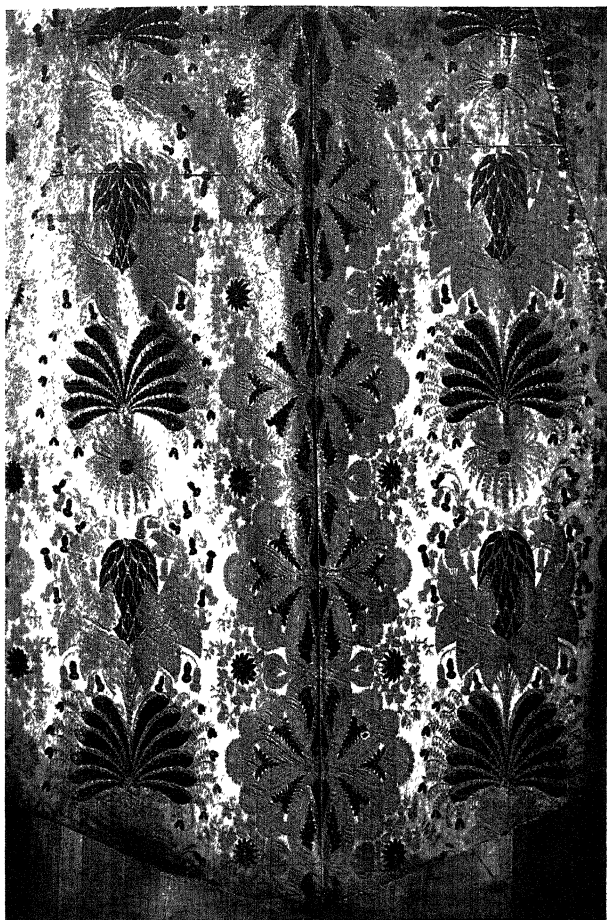


PLATE 23. A rich brocade with palmette design of the Louis XIII era. Blue-green chenille has been brocaded in with the yellow pattern on a white background.

Courtesy Musée Historique des Tissus, Lyon.

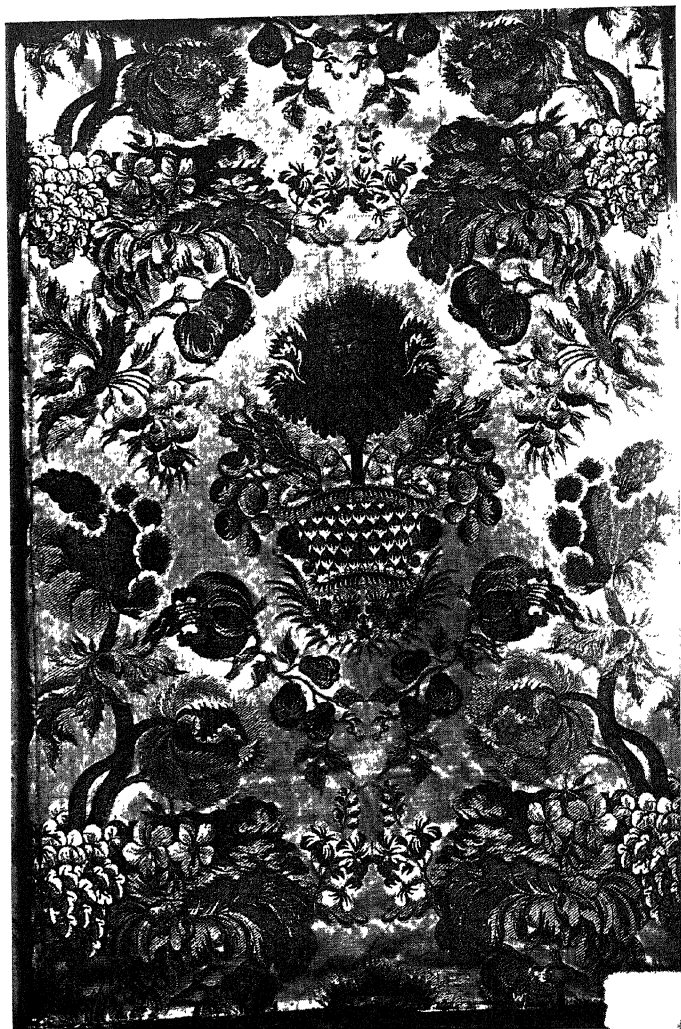


PLATE 24. A baroque brocade of the early eighteenth century showing the introduction of realism. Polychromatic hues are mingled with gold against a gray satin background.

Courtesy Musée Historique des Tissus, Lyon.

The Baroque Style of Louis XIV

TO ANYONE interested in the arts of France Louis XIV is a familiar figure. No other king was ever painted and sculpted and carved in wood or marble so much as this one, but then, too, no other king had such a long reign. The student of French art can recognize readily the stocky figure, the huge wig with long curls falling over the shoulders, the high red heels on his shoes, the voluminous brocaded coats finished with lace frills, and above all the arrogant countenance with a prominent nose. Coming to the throne as a child of five he grew into his task. His reign was such a long one, from 1643 to 1715, that it is scarcely comparable to that of any other one king. One might almost divide those seventy-two years into three eras for styles and manners changed as he grew older and developed new ideas and beliefs.

As a child he was under the influence of the famous Cardinal Mazarin who loved everything Italian. French style and arts had so recently developed individuality that it was but natural to lean back toward the favorites from Italy. With young manhood came an enthusiasm for the military life, and glory achieved on the field of battle was highly prized. Trophies of war appeared in all kinds of design for France was rising to the crest of the wave. A certain softening influence marked the second phase which was apparent from the time the king first discovered the charms of feminine companionship. This continued to grow until late in his life, after his marriage to the religiously minded Madame

de Maintenon he, too, turned to religion and found solace in the church. The severe régime which was then inaugurated throughout the whole court had a reactionary effect on the years following his death.

This king was a vain man, but undoubtedly a great one. The arts of the whole country were created only as a background for him, and all life revolved around him. He and his minister Colbert did a tremendous amount for the advancement of every branch of art. The Academy of Painting was established and some years later the Academy of France at Rome. The Gobelins, the works at Beauvais, the Aubusson factory were all under Colbert's control. Even the lace industry was perfected under his rule and so gave added impetus to the use of lace motifs in large patterns. This royal support of manufactories was of great assistance in the building up of France as the textile center of the world. With the recognition of the Baroque style France took Italy's place as a style dictator and it was not long until Italy herself turned to this new source for inspiration.

The great Louis XIV style is *Baroque*, baroque at its height, with all the fantastic forms and impressive ornamentation which demand attention and even admiration. There was a sculptural quality to the huge scrolls and the heavy garlands of fruit or flowers. All the patterns were large, bold and florid, but with a brilliant play of light and shade that was fairly dazzling. They were full of abundant detail which emphasized their great beauty. Large brocaded vases that fairly stood out in relief from a satin background were filled with unreal flowers and foliage, within the outlines of which lace motifs were represented. While very few confining lines were employed spreading designs were accented or connected by floating bands of ribbon or lace. Strange combinations of flowers that were utterly impossible appeared in enormous and vigorous patterns. The French love for their gardens was evidenced in the constantly repeated

trellises and baskets, and even fountains were woven into superb brocades. There were no flat surfaces, every detail was rendered in the round, and every pattern was overlaid.

In addition to the bold sweeping scrolls, arabesques and cartouches which appeared alike in wood or marble, in painting or sculpture, in tapestries or in brocades and damasks, the double *L* belonging to the king was another distinguishing motif of this period. The lovely scroll-like letters were intertwined back to back and added a graceful line to almost any design of which they formed the central motif.

That the baroque style was tamed down toward the end of the century is due largely to the feminizing influence of the court favorites. When a lad the king had been married for political reasons to Marie Thérèse, a cousin of his who has been described as "a dumpy stupid little Spanish princess." Is it any wonder then that he turned willingly to the lovely Louise de la Vallière, who was so femininely charming? Under her great influence there was a softening of the severity which had so long been the backbone of all good design. To her also may be credited the introduction of Chinese motifs, for she loved all things dainty and fantastic. Monkeys and strange grotesques of eastern origin caught her fancy.

Her power did not last long, however, and she was soon superseded by the beautiful and more dominating Madame de Montespan whose artistic tastes were more for playfulness and gaiety. It was about this time that the baroque style began to lose its fulsome quality and was brought within the confines of usable design. A more natural style began to develop with slender forms and greater freedom in drawing. The powerful love of display which had led to the production of such gorgeous silks and tapestries was slightly toned down. The same flower motifs were there but they were lighter and more graceful. A kind of capricious-

ness was evident in all fabric designs. Frame work in patterns had quite disappeared and waving bands were more often part of the background than part of the design.

The one outside event that had any great effect on the textile arts was the visit to France in 1686 of a brilliant cortège from Siam. They came laden with gifts from one great king to another—rare lacquers, Chinese porcelains, silks and embroideries, and rugs from Persia. Extravagant fêtes done in what the French artists conceived to be the Chinese manner followed this visit. Silks with quaint Oriental figures or bits of fantastic architecture were thereafter favored for the small salons that were just coming into fashion.

The turn toward religious life which followed the king's marriage to Madame de Maintenon had very little effect on textile design. Her influence, less noticeable than that of her predecessors, was mainly on embroidery. She herself did handsome needlework, even in the council chamber where she was constantly in attendance. One event of vital importance that was largely due to her importunities, so they say, was the Revocation of the Edict of Nantes in 1685. No other one document has ever affected the weaving industry to such an extent. As most of the weavers were Protestant it meant that they were forced to flee from their homes, for their security against persecution was lost. Immediately there was a noticeable decrease in the number of looms in operation in France and at the same time fine weaving was encouraged in the adjacent countries to which the weavers migrated. It was not until the following century that this loss of momentum was entirely regained.

Architecture and building in which the king was so intensely interested necessitated an increased production of specially designed textiles. The great palace at Versailles, so handsomely laid out, is a superb monument for it is a true expression of this remarkable king. Many yards of rich

fabrics were required for the glorification of the interior, the decoration of which was under the supervision of Le Brun. But that palace, though enormous, was just one building among many, for a town sprung up around the court. The wealthy nobles who could not be housed within the palace proper had to have quarters of their own. More buildings and more textiles, including those for clothes, for never have there been more brilliantly beautiful court assemblages than those of Le Grand Monarque.

The over-decorated rooms of Versailles fairly demanded gorgeous costumes and the king's love for finery acted as a stimulus to all his followers. Though they dared not equal his splendor they appeared as worthy seconds. It was an age of extravagance when metallic brocades were quite the vogue for coats and gowns and when wigs piled high were the fashion set by the king. Costly laces hung from inside wide sleeves and were made into voluminous jabots. The men were quite as elaborately costumed as the most dashing and expensively clad ladies of the court. In later years after the king and Madame de Maintenon had settled down to a more serious life, he had the Trianon constructed so that they might live quietly and enjoy outdoor pleasures. This put a temporary damper on the demand for rare silks which was quite amended in the next reign.

The furniture, too, needed to be highly decorated and upholstered with elegant fabrics. Early in the reign when the Italian influence was still apparent Genoese velvets seemed quite the proper fabrics for chair back and seat, but after the turn of the century with the introduction of somewhat lighter designs in furniture a change was made in fabrics as well. Fine tapestries from Beauvais or the Gobelins were better suited to the more graceful chairs. With the marquetry, lacquer and painted woods, flowering brocades seemed more appropriate than even the lighter weight Venetian velvets. Walls were hung with damasks as we would hang curtains

at a window so that the whole room presented the aspect of a richly padded box when the curtains were drawn and no apertures were apparent. Tapestries of great size with historical or mythological scenes covered whole walls in the great assembly rooms. Rich mirrors with ornate frames were hung over these fabric-covered walls and heavy chests or cupboards stood in front of them.

Louis XIV started the vogue for receiving in bed. As these beds were huge affairs often set up on a dais they provided an excellent and imposing background for a person as regally minded as he. Some of the very early beds had a faint suggestion of the Italian spirit, but most of those which the king selected were definitely French. It is said that he had several hundred from which to choose. Some were as elegant as his throne while others were very simple. The early seventeenth century beds were hung with damasks from Genoa or Bruges, with velvets, or with heavy cloths of gold or silver. As fashions changed with the passing years, so did the draperies for beds, and satins and taffetas, brocades and damasks of white, yellow, green or violet were the new favorites.

The *Lit à Alcove* was the bed set upon a platform and cut off from the rest of the room by a balustrade. When this railing was set far enough away so that the crowd of courtiers might enter and approach the royal bed it was a *Lit de Parade*. A bed with four posts (*Lit à Colonnes*) necessitated the use of six curtains so that it could be entirely enclosed. The story has been told that the king sometimes shut himself up in his room-like bed, only sticking out a hand when necessary for a courtier to salute it with a kiss. The *Lit Clos*, really a cupboard with sliding doors, was found more often in the peasant homes than in those of royalty. As rooms and fireplaces grew smaller in scale there were fewer draughts, and therefore less need of shutting up a bed entirely. Then the high canopies came into fashion which required even

more elaborate fabrics. This canopy, set high on the wall and projecting straight out, was quite separated from the bed itself. Highly ornamented brocades with embossed silver embroidery were used for the valance edged with metallic fringe. Bouquets of plumes or artificial flowers cut from precious metal ornamented the corners. A fine silk tapestry might occupy the space behind the head of the bed while the curtains were of richly embroidered damask and the bed cover of a third and equally sumptuous material. Those gorgeously draped beds played a really important part in the court life of *Le Roi Soleil*.

Besides the two remarkable ministers who helped to make this an important reign there were many French artists who did their bit for the advancement of the textile industry. Le Brun's name stands first for he was placed ahead of all the other contemporary artists when assigned by Colbert to be overseer of all work at Versailles. He coordinated the whole thing so that gardens, architecture, interiors, sculpture, paintings, textiles and the fine work of the minor craftsmen were blended together to form a complete and satisfying whole. That he was not just an executive or a painter was proven by the patterns he made for new *petit point* designs. With Colbert he founded the Academy of Painting and Sculpture, and the same partnership put "Les Grandes Fabriques de Lyon" in a place of authority and importance.

Lyons as center of the silk weaving industry had been growing steadily since the fourteenth century. Having lived through their early career of ups and downs the weavers were by that time experts in their art. Colbert built up a business-like organization for them in which two classes of workers were recognised. Superior in many ways to the old guild systems, the "community," from whom the governors were selected, consisted of master weavers, associates and apprentices. The second group were not weavers at all, but

all those lesser workmen who were so essential to the making of superior products. There were markers and stampers and dyers and the handlers of all the necessary equipment. Practically all of the good weavers had their own looms at home and carried away from the factory the pattern and the yarn. Young boys who started out as apprentices at the age of fourteen, worked for five years with the same master. They were only acknowledged as associate weavers after they themselves had created a masterpiece approved by a committee of their superiors. From associate, after two years further study, examinations and another example of their skill, they could progress to the coveted title of master weaver.

Le Nôtre was important, too, for it was he who laid out the magnificent gardens of Versailles. He provided those perfect settings which offered occasional release from the pomp and formality without which Versailles would not be distinctive. Jean Bérain made some patterns for fabrics but his greatest task was designing scenery and costumes for the magnificent fêtes. He was officially titled "*dessinateur de la chambre et du cabinet du Roi*" and after Le Brun's death he was commissioned to decorate all the king's ships. He leaned toward figure motifs and on his large panels one can usually find either caryatids or grotesques placed in classical symmetry. He always included a canopy wherever he could, and platforms or steps to increase the feeling for perspective. His tapestry designs are noted in the following chapter. Pierre le Pautre also worked in the baroque manner and specialized in the superbly sweeping lines of draperies. At the turn of the new century, just before the old king died, the influence of Watteau was noticeable. He introduced into Louis XIV designs the colors which are more representative of the style of Louis XV.

Another artist, or architect is perhaps better, who drew designs for velvet brocades was Daniel Marot. A master of

the baroque style he represents the second half of the reign of Louis XIV. His damasks and brocades showed the fully rounded and shaded floral patterns that were typical of that era. It was most unfortunate for France that he fled to Holland after the Revocation of the Edict of Nantes, for he might have created even finer designs at home than he did for the lands which welcomed him. His influence was strong in the Lowlands where he introduced the over-ornamented French Baroque. Later in England he had a hand in the interior decoration of the great palace at Hampton Court. He could and did design anything from a state carriage to the famous silver-plated furniture, and from sculpture for fountains to magnificent textiles with which to dress a bed of state. His designs for sedan chairs were elaborate but quite practical. One of them, the outside of which was black leather with handsomely decorative panels, was lined with red Genoese damask and finished with gilt braid and fringe.

The richly ornamented baroque patterns were usually rendered in colors similar to those of the Italian Renaissance. Dark red, old gold, dark green and blues were the favorites. Those same tones can be found in the contemporary tapestries with the addition of the beige and *écru* and warm grey which are so essentially French. Some of the tapestries which were as a whole lighter in value than the silks gave distinctive names to certain hues. The Gobelin scarlet is well known, for never has there been a more brilliant and apparently translucent color. The Lyons black was rich and deep, and the Rouen blue of ethereal loveliness. The Tours green was the true color of the surrounding woods.

After the textiles had become lighter in design as well as in weight and with the introduction of the rock and shell of the next period, a change in colors was apparent. They were more subtly blended and in varying tones and degrees of intensity. A yellowish pink was dubbed *aurora*, and a purple

hue that was unfading was amaranth. Flame and a soft grey-green which was popular alike for walls and furniture could be combined with a lucent red. Silver or gold embroidery added spots of brilliance and the gilt or silver upholstery nails reflected light.

The style which followed, the Regence, and then the more delicate Louis XV had already made their debut before the great King died. He reigned so long that he survived changes of style as he did changes of ministers and of favorites. It has always seemed just a bit sad that he lived to see his son and his grand-son die, and to realize that once more a five-year-old boy, his great-grand-son, would wear the crown of France. A great monarch—and a most impressive style.

CHAPTER XVI

Tapestries of France and Flanders

THE subject of tapestries is really much too comprehensive to be treated in a book of this character, but as they were such an important part of textile history from the fourteenth to the eighteenth century they must be included. This little chapter is just an acknowledgment of them and a summary of the different classifications, with notes as to a few of the more famous ones still in existence.

What are these textiles that are worth a king's ransom and where did they originate? As to what they are and how they are made that will be found later in this chapter. As to where they originated we must turn back to the pages of history already considered. While delving into Egyptian lore we discovered that textiles with pictorial patterns interwoven had been found in the tomb of Thotmes III which would date them somewhere between 1500 and 1400 B.C. Those might well be considered the very first tapestries. Then came the Coptic tapestries made in the fifth to seventh centuries of our era which are so much better known because there are so many examples of them available for study. They were made on a linen warp with wool weft threads crowded tightly down into place. And that is not so very different from the technique of the fifteenth century or the method followed even today for hand-made tapestries.

The earliest tapestries made in Europe were sometimes called "Saracenic work" because that type of weaving was known to have originated in Egypt and to have been brought

to Europe by the conquering Mohammedan army. The few weavers who stayed on after the Moslems had withdrawn set up the horizontal looms on which they were accustomed to work and made tapestries in the good Saracenic fashion. They do say that is how the factory, or rather the weavers, at Aubusson got their start, way back in 732. But they reached no great heights because they were for the most part isolated, and had no truly artistic resources to draw from. Real tapestry history does not begin before the fourteenth century.

The name itself, both Greek and Latin, referred to a covering for furniture or the floor. That same source supplied the French word for carpet, *tapis*, and the German *tapetan*. A *tapisserie* may be a tapestry as we know it, or it may be upholstery for chair or sofa put on by a *tapissier*. Though our word tapestry literally means but one kind of work there are many pictorial weaves that are often designated in that way. There is also the hard woven cotton stuff that one buys by the yard under the name of cotton tapestry, though it bears little resemblance to the original. There are even printed cottons and crashes which carry the name commercially, and to the uninitiated *petit point* is sometimes known as tapestry. One dictionary gives as a definition "a woven picture." And that is not a half-bad interpretation of the textile that is woven and at the same time carefully follows the outlines and colors of the picture made by an artist. Besides being a work of art it is certainly the most durable of all textures, which may be why so many fine pieces have been preserved for centuries.

There are three general classifications of tapestries: (1) those of the Gothic era, the best ones made in the fifteenth century, (2) the entirely different type made under the direction of the Renaissance artists that are more like paintings, and (3) the Baroque and Rococo tapestries of France made in the seventeenth and eighteenth centuries. All of the greatest tapestries were woven in France and Flanders,

though a few splendid ones were made in England, and some others in Germany, Italy, Spain, and Russia. France is the mother of Gothic tapestries and it is in France that we find the greatest collections. However, it might be noted here that some of the most remarkable examples of all the different kinds of tapestries have been acquired by collectors in America.

Even the Gothic tapestries have to be divided up into different classes for they developed along dissimilar lines. There were the early ones where every inch of space was filled with design and where there was no border. Then came the later Gothic styles with more set pictures and usually finished with a narrow border, and finally the armorials with their intricate foliage background. The one important characteristic of this whole group is a splendid feeling for decoration. Line, pattern and color were of utmost importance to those old weavers. Some showed the strong religious trend of the time, some were purely romantic, but all were magnificent in color and decoration.

Bruges since the eleventh century had been the center of the wool industry, though then as now, some of the finest wool came from Kent in England. Without those good wools tapestries would have been much less important. As a just recognition of the quality of the wool of Bruges, the Order of the Golden Fleece was started there in 1420. Arras, the little town in northern France whose name the English took over as significant of any tapestry that was hung on the wall, was the real center of tapestry weaving in the fourteenth century, and Brussels was the leader of the next century. All of these towns were controlled by guilds and by the early fifteenth century the tapestry weavers had their own. It is said that the industrious people of that section had but two interests in life, their church and their weaving.

Tapestries had first been commanded for the churches but it was not long until the wealthy land-owners saw the

possibility of utilising them in their large, but rather cold and barren houses. They were put to many uses that seem strange to us for not only did they hang in specified places on all interior walls, but some were used to bedeck the streets on fête days. In any of the old paintings or illuminations for manuscripts wherein a ceremony is shown taking place in the central square of a city there you may find the colorful pictorial tapestries hanging from balconies or thrown over specially constructed platforms to form a background for the spectacle. Other tapestries were carried about as baggage in the early days and served various purposes wherever the travelers stopped. As they were usually hung in folds at that time it was quite essential that the figures be large and the colors bold so that they would not be lost sight of in the draping.

In the fourteenth century it is probable that both Arras and Paris were using high-warp looms instead of the horizontal ones with which the industry had started. The only dated tapestries left from that period are in the magnificent set of the *Apocalypse*, now preserved in the church treasury of the Cathedral at Angers. This set, started about 1360-1370 for the Duke of Anjou, the brother of Charles V, originally included some ninety scenes. Long lost sight of they were badly treated and cut up, but since their discovery, with seventy scenes practically intact, they have been guarded carefully as one of the great art treasures of the world.

Arras suddenly lost its leadership when besieged by Louis XI in the middle of the fifteenth century, and Brussels slipped into first place. There the weavers working under royal patronage made greater progress. The Flemish artists were making cartoons, and designs of both Van Eyck and Memling have been woven into wool. They had a decided preference for epic poems with romantic episodes for the more pictorial tapestries. Separate fields were created to hold different subjects, though lovely ladies and humorous

animals were often brought into the same picture. There was very little perspective and very little sky in any of the early tapestries and for the most part the drawing looked pretty flat. Some interesting pieces included inscriptions in decorative Gothic lettering, but seldom was the name of the weaver or the name or mark of the town included. That was a later development.

The famous *mille fleurs* were a fifteenth century product, with their dark blue-green background of foliage to which many little spots of brightly colored flowers gave a sense of animation. Even under foot there were sprightly flowers ready to be trod upon. The effect was always vertical, and when figures were included they were so slender that they just contributed vertical contours. That is one point that marks these tapestries as definitely different from the horizontal and sculpturesque ones made during the Renaissance. It must be added that those people who were pictured in the early verdure tapestries were decidedly charming and graceful and romantic.

The later Gothic tapestries were more highly pictorial and were made with a greater variety of colors as well as with gold thread. Where the early ones had required only fifteen or twenty hues, the later ones had as many as forty. The borders, even if they were only about six inches wide, were something new for they framed the woven pictures with their patterns of flowers and fruit. The so-called Gothic country-life tapestries were noteworthy for they combined a story with the *mille fleurs* background. The most famous series is "The Lady With the Unicorn" now in the Musée de Cluny in Paris. The brilliant red background is particularly interesting with the strong blue that is used in the central medallions. Those specific tapestries were long thought to be filled with Saracenic motifs, but recently all of the Moslem touches have been identified as belonging to certain medieval family crests. This series of six was undoubtedly

made on the occasion of the marriage of a young lady belonging to a prominent and wealthy family.

The Gothic verdure *armorials* were a smaller group of tapestries on which were emblazoned decorative coats of arms. The background was usually either the massed flowers and foliage of the *mille fleurs* patterns or the more open and slightly more realistic leaf designs that were rendered in lighter tones of green and with a greater variety of colors in the ornamentation. With the introduction of more sky and the suggestion of perspective the *mille fleurs* backgrounds were done away with or were reduced to borders for the central theme. Vistas became important and architectural details were in the ascendant. It is those tapestries that paved the way to the well-composed designs of the Renaissance.

Some authorities say that there are no transitional pieces and that the Renaissance burst upon the tapestry weavers in full flower. Though the Italians had been interested in those loom-made pictures of France and Flanders the patterns had not appealed particularly to their more florid taste. That difficulty seemed to be overcome when it was decided to import some expert tapestry weavers from the north, but unfortunately that venture did not work out so very well. The final solution of the problem was reached when the cartoons made by the artists of Italy were sent to the looms in the north where the Flemish weavers interpreted them as best they could. All this had taken time, so it is quite true that the Renaissance was at its height when the justly famous Italian cartoons were first woven into rich and notable tapestries. After that the Italians made as great use of them as they did of their silk damasks and velvets. Though pictures painted on walls preceded and really instigated the interest in tapestries the heavy texture of the woven fabric gave more color and vitality to their somber rooms. All the Gothic or Renaissance palaces, no matter how decorative architectur-

ally, were in great need of the rich background provided by colorful textiles.

Whereas the fine Gothic tapestries had all been the conceptions of northern artists the new style was distinctly that of Italy, even though rendered by Flemish craftsmen. The power of the Italian Renaissance was so great that by the end of the first decade of the sixteenth century Gothic tapestries were quite out of fashion. No longer could the workers labor over fine details and the intricate interlacement of verdure motifs. The new trend was toward bold patterns with sweeping lines, effective as paintings rather than as examples of the fine art of weaving. The color harmonies were pleasing but weaker than those of the Gothic age and yellow and white seemed to dominate in place of the famous Gothic red.

When Raphael's cartoons were first sent to Brussels they were absolutely different and no doubt startling to the weavers. The foliage was larger and more realistic, with shading to give the effect of dark and light. The figures were grouped as in the contemporary paintings of Italy and in the background there was lots of open space, sky and perspective of architectural details which were never quite understood by the weavers. Romantic and religious scenes gave way to classical subjects. There were many amusing inconsistencies for a classical story might be told with Roman costumes, contemporary Italian architecture and a Flemish floral background. But something new, something different had been achieved.

Probably the most famous designs created by Raphael were those for the series called the "Acts of the Apostles." Made for Pope Leo X they were first shown in the Sistine Chapel in 1519. The full-size cartoons, left-handed because they were made for a low-warp loom, are carefully treasured in the Victoria and Albert Museum in London. He also introduced the wide borders broken up into compartments

wherein detailed architectural scenes were displayed. Guilio Romano, the favorite pupil of the great master, was a prolific worker and many of the best patterns of that period are his. Bernard Van Orley worked also in that famous atelier of Raphael's where he acquired his feeling for the Italian Renaissance which showed so strongly in his later work.

Along in the middle of the sixteenth century the Italian grotesques were introduced. Old Roman ruins were being dug out, the Golden House of Nero and others of equal richness were all inspirations for this new and fanciful trend. The Renaissance painters copied the queer pictures discovered in long-hidden chambers and also employed them in their tapestry cartoons. Scrolls, garlands, arabesques all terminated in figures. Or viewed the other way, classical or amusing heads and torsos suddenly tapered off into a charming acanthus. Grotesques were used in the main design of a tapestry occasionally, but more often in the borders which had achieved such importance. They were wider and even more striking sometimes than the central picture. Nudes that were voluptuous and quite unlike the slender Gothic figures began to be woven in, and pagan scenes of revelry against architectural backgrounds replaced the chivalrous stories told against forests of soft blue-green. The English liked those pictorial tapestries particularly and it is said that when Henry VIII died over twenty thousand were included in the inventory of his possessions.

Brussels still held her position and was the first to put her mark on tapestries turned out by her master weavers. The sign of the Brussels weavers was two golden B's, one each side of a small red shield, the whole device appearing in the lower left selvage. Other cities had equally distinguishing insignia, and the full story about them can be found in most of the good books on the development of tapestries. Though most of the tapestries had been woven in series there was occasionally one alone which told a complete story. Some

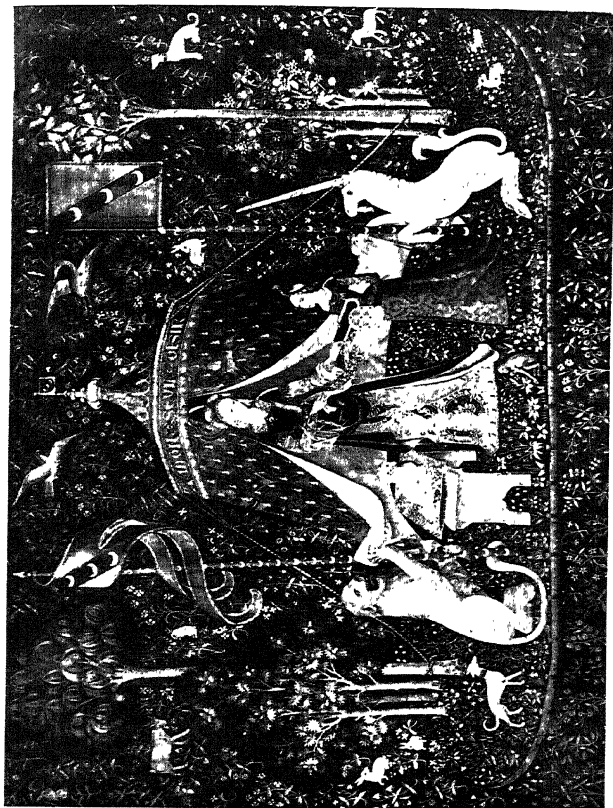


PLATE 25. One of the beautiful *mille fleurs* tapestries made at the end of the fifteenth century. It is one of the series known as "The Lady with the Unicorn." Courtesy Musée de Cluny, Paris.

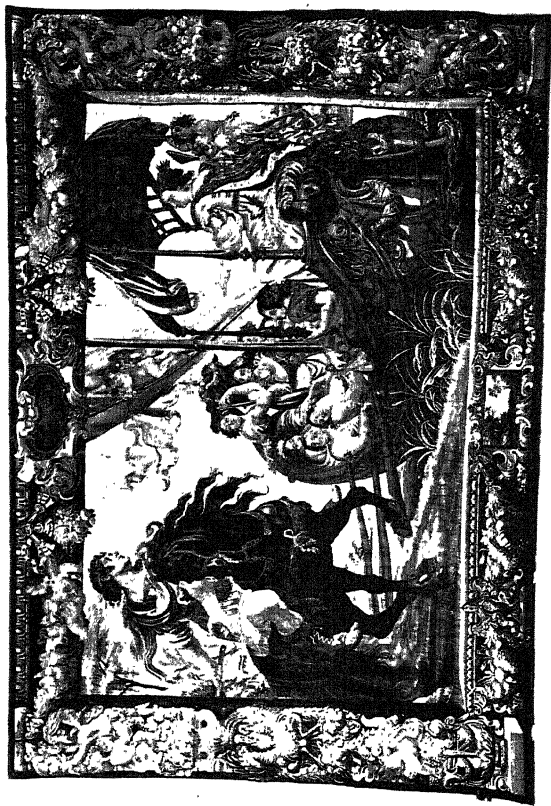


PLATE 26. A pictorial tapestry made in seventeenth century Brussels, showing the heavy and colorful frame surrounding the scene which is representative of Antony viewing Cleopatra on her barge.

Courtesy Metropolitan Museum of Art, N.Y.

were designed and made to fit certain spaces, but more often they were woven in sets and the owner adjusted them as best he could to the space he wanted to cover. That accounts for so many of them being cut to fit over or around a door. It is also why so few of them were centered in a wall space. They even fitted them around corners if need be, regardless of the position of the central motif and of the fact that the pictorial quality might thus be destroyed.

All this time France had not been idle, though she reached her zenith in the seventeenth and eighteenth centuries with the tapestries created in the great ateliers of Beauvais, Aubusson and the Gobelins. Francois I had started a work shop at Fontainebleau in 1533, and under his son Henri II the industry had progressed rapidly. Both Diane de Poitiers and Catherine de' Medici were interested in the new textures, the latter's influence being entirely Italian, of course. Some of the best tapestries from the new atelier were made for Diane's chateau at Anet, all depicting scenes in praise of the ancient goddess of the hunt and carrying the crest of the modern Diane. The chateaux of the Loire all needed tapestries, it seemed, which provided many new motifs, the familiar scenes of the court as well as tales of chivalry. To further the growing industry that picturesque monarch Henri IV assembled many of the best Flemish tapestry weavers he could find, and the Edict of Nantes pledged them security from religious persecution. The first factory owned and operated by the state was the one he set up in the Tuileries Palace in 1607. Later in his rule there were five ateliers all doing a prosperous business in the city of Paris. The identifying mark of those weavers was the royal fleur-de-lis, the capital letter P and the initials of the weaver all intertwined.

Louis XIV and his minister Colbert are often regarded as the ones who did the most for tapestry weaving in France. It was due to their interest that the *Gobelins* works were made

successful. This Gobelin family had been dyers, not weavers, since the fifteenth century when one of their ancestors had discovered a peculiar scarlet dye. Because of its situation the king selected their property and bought it for his new tapestry atelier which thereafter carried their name. It was in 1662 that it was made the "Royal Manufactory of Furniture of the Crown" and under one roof various products besides tapestries were turned out. Le Brun left Fouquet at the king's command and was installed as director of the Gobelin works. After 1697 the factory was strictly limited to the making of tapestries and it was not until 1826 that carpets were added.

The seventeenth century tapestries made there were quite equal in technique to those of Brussels and were really superior in design. The French possessed a suavity of line and a harmony of color that had entirely eluded the Flemish weavers. Louis XIV enjoyed the full sculptural quality of the baroque patterns and the magnificent scenes which could be rendered so vigorously with the tapestry technique. Bérain's designs he liked particularly, for they were full of surprises with their grotesques, grinning satyrs, masques and gargoyles all mixed in with the central design which was usually classical in its symmetry and subject. Those baroque tapestries were really not so successful at covering a large area as the old Gothic ones. Rather they were like wall paintings, each one studiously realistic, and had to be made to fit special spaces and to give definite pictorial effects. The wonderful tapestries ordered for Versailles were all designed for certain places and helped to carry out the decorative ideas created in the mind of that master designer, Le Brun. With the eighteenth century came the rococo patterns even in tapestries, and wide borders, like massive gold picture frames, came into vogue. Some one has said that all you need add to a design of Bérain's is some Chinese curves and you have the rococo style. As in the patterns for silk textiles the

court favorites each had her whim. La Pompadour, who had excellent taste, collected some of the very finest tapestries and suggested the use of smaller designs scaled down to fit chair backs or seats. To Du Barry we owe the introduction of negro figures, for she was always attended by a small negro page. The most important set of tapestries of that century was the one that related the adventures of Don Quixote. The designs made by Coypel, twenty-eight in all, were filled with decorative detail in addition to the central subject. Those splendid examples of the work of the master craftsmen of the Gobelins are now scattered among many collections, but the original cartoons are preserved at Compiègne.

Beauvais tapestry is one of the most repeated phrases of the guides who lead bewildered groups of people through the great palaces of France. The first factory in this little town, lying just north of Paris, was started by one Louis Hinart, who made no great success of it though he professed to be a good merchant as well as a manufacturer. The king in 1664 granted to this town, and to some others in Picardy, the right to weave tapestries for the crown. This royal support together with an imposing order from Madame de Montespan tided them over a bad time.

A succession of famous names is connected with Beauvais. In 1726 Jean Baptiste Oudry was made art director and the tapestries turned out then owe much to his genius. The small scenes of the hunt, and the animals, birds and trophies connected with it, are all typical of his designs. Nearly every one is familiar with his tapestry interpretations of La Fontaine's Fables. The tapestries woven at Beauvais under his direction and those he designed for the Gobelins are perhaps only second to the splendid masterpieces of the Gothic era. Boucher, the most brilliant of the eighteenth century designers, worked for him and ultimately succeeded him at the Gobelin works. Dumons did well there and was later sent to the Aubusson plant. At first they made verdure tapes-

tries like those of other towns, then the grotesques, and finally the small story-telling scenes which remain one of their greatest contributions. Light backgrounds, picturesque designs planned to fit a certain space, soft colorings and a fineness of weave are their outstanding characteristics.

The third of the great French tapestry ateliers is that of *Aubusson* which lies some two hundred miles south of Paris. It is still a center for hand-made tapestries, as there are even now over two thousand persons working on their looms. It is the name you hear most often on the lips of those who do not distinguish between French tapestries. They do say, there in that weaver's town, that the original factory was started in 732 by some Saracenic weavers. However, it was not until tapestries rose to such prominence in the sixteenth century that we hear anything special about Aubusson. Their next step up was when the king granted them, as he had many others, the right to use the title "Royal Manufactory." Dumons was sent there to lend a helping hand and he took with him from Beauvais, not only expert weavers but many of their designs as well. The Revocation of the Edict of Nantes drove at least two hundred weavers away, many back to Flanders, and a few to England. But Aubusson was soon flourishing again and in the best period from 1740 to 1790 was turning out tapestries that can still be found all over France. Oudry's name was important there, too, and Boucher, and Huet who made pastoral scenes for them.

Where Beauvais specialized in weaving small pieces for furniture, Aubusson made huge wall coverings and carpets with a tapestry weave that were equally decorative. Those tapestries are a bit looser in texture than the Beauvais' and quite different from the Gobelins' which are always so pictorial and so brilliantly colorful. There is a quality of light and a feeling almost like that of silk which sets the tapestries of Aubusson apart. The scrolling baroque or rococo borders, some like heavy gold picture frames, the use of

medallions, which was the fashion late in the eighteenth century, or the classical simplicity of the Directoire or the early Empire can all be found in the Aubussons.

In considering the great tapestries of Flanders and France we sometimes overlook the fine ones that were made in England. Back in the thirteenth and fourteenth centuries the English kings had encouraged the weavers from Flanders to come and settle in England, and to make tapestries in the prevailing style. Remembering that England has always produced fine wool, it is quite relevant to find in the statutes of that period the official decree that no thread other than pure wool be allowed for use in the making of tapestries. Henry VII was one of the first to encourage all kinds of cloth workers to come to England, and he, as well as the other kings who followed his example, was helped vastly by the religious unrest in Flanders and France.

In the middle of the sixteenth century a country squire named Sheldon set up a plant in Warwickshire for the weaving of tapestries. The weavers were all immigrants from Flanders and for a time their works prospered, their specialty being the rendering of stories from the Old Testament. 1620 marks the date of the first real enterprise in tapestry weaving—the establishment of the workshops at *Mortlake* under the patronage of the king. A director was imported from the Gobelin plant and most of the weavers were recruited from the old factory established by Sheldon, while others came from Flanders. Whereas the patterns made under Sheldon had been small and with dainty colorings, they soon blossomed out with true Renaissance boldness under the new director. Sir Francis Crane was the proprietor of the Mortlake plant and so long as he lived it prospered, but after his death in 1636 there was a noticeable lessening of progress. Though none of the English tapestries had the suave and subtle beauty of their French rivals it is worth remembering that the Mortlake tapestries

made from Raphael's cartoons of "The Acts of the Apostles," bought by Charles I, have been quite as highly prized as any of the other copies of that famous series.

In the eighteenth century English tapestries were few and far between, though Paul Saunders working in London made some that were distinctive. French tapestries were almost as much in demand in England as they were at home. Oval medallions filled with figures were set among festoons of flowers and foliage on a cream background. They reflected the late eighteenth century classicism and were well-adapted to the contemporary interiors. One other progressive step in tapestry making in England was made in 1881 when William Morris started a plant at Merton Abbey. That workshop is still there and still turning out interesting and decorative pieces. Morris was aided by Burne-Jones, who usually drew in the figures against Morris's background of flowers and foliage. As soon as Morris had learned the technique he planned and supervised the making of the whole piece no matter how many assistants he had.

To explain the intricacies of tapestry weaving is a task for an expert, but perhaps a general idea of the method will be of interest to all. Every one can recognize the horizontal ribbed effect of a fine wool tapestry, but the little vertical lines of color that make the middle tones and the slits that really provide the shadows are not nearly so obvious. First of all a cartoon is essential—a full size working drawing made by the artist. Then there are two general types of looms, the vertical ones, such as the Gobelins use, and the horizontal ones like those of Beauvais and Aubusson. When the warp threads of heavy cotton or linen are stretched on the horizontal loom and controlled from underneath they are called *basse lisse*. This refers to the handling of the warp threads from underneath whereas the term *low-warp* refers to the position of the loom itself. With this method the picture the weaver is to follow is placed underneath the warp,

and as the weaver always works from the wrong side the tapestry is just the reverse of the cartoon. For that reason cartoons made for low-warp looms are always left handed so that the finished tapestry will resemble the original conception. By inserting a small mirror between the cartoon and the warp the weaver is able to see how his work is progressing, but cannot see it in entirety until it is taken from the loom.

When the warps are stretched up and down with the controls overhead, and the weaver sits facing his work the loom is known as *haute lisse*. This again refers only to the position of the controls of the warp threads and the loom itself is called a high-warp loom. In this latter method the picture which the weaver is copying is behind him and the main outlines are roughly sketched in on the taut warp threads. He, too, has a mirror so arranged that he can see the face of the bit of work on which he is engaged. In this case the tapestry is exactly like the picture so the cartoon does not have to be made in reverse. One other advantage of this method is that from time to time the weaver can go around to the front to see how his work is progressing and thus compare it with the original.

Tapestry weaving is quite simple as only two operations are necessary. The first, by means of the controls either overhead or underneath, pulls every alternate warp thread forward making a shed through which the weaver passes the bobbin. Those warp threads are then allowed to fall back into place and the other threads are pulled forward locking in the weft and making a different shed through which the bobbin is passed in the reverse direction. That completes the second operation and the woollen weft threads are then forced tightly down into place by a comb-like tool of ivory. The weaver controls with his hand the number of warps through which he wishes that particular bobbin of color to pass. It does not traverse the loom from selva to

selvage but only for the little space that a particular color is needed. A small section, such as a leaf, can be quite finished before touching the part next to it which may be plain background or another leaf or almost anything. This weaving is done with small bobbins, not shuttles, which hang down in the back ready to be picked up by the nimble fingers of the weavers.

As the weaving is done in small sections it means that there are many vertical breaks which are carefully drawn together after it is finished. These slit-like breaks are seldom long and the old weavers who were such artists employed them only where they wanted deeper shadows. If they were sewn together too well the shadow thus created was lost. Many of the modern tapestry workers see these slits only as a means of working a pattern and prefer to have them drawn smoothly together. Another art of the ancient weavers was to provide half-tones by means of *hatching*. This is the passing from one color to another by intermediate tones that have a bit of both colors in them. This softens what might be hard edges and does away with any crudeness of contrast. It is a difficult art and one that requires as much skill as the carefully modulated brush strokes of a painter.

This is the mode of weaving still followed though it differs slightly from the old Flemish method. Most of the Gothic tapestries were woven with a lock-stitch which did away with the vertical slits as well as with the horizontal ribbing. Then, too, on the back of the old fourteenth and fifteenth century tapestries there are many loose ends and many loops of thread where one color or another was floated across a space of a few inches until it was needed again. For that reason the pattern is difficult to trace on the back, whereas on the French tapestries the back looks almost as smooth as the front. In the old days only twenty to thirty colors were used, while in the modern Gobelin factory they have

over fourteen thousand. And even then when a color is not quite to a weaver's liking two or three tones are blended together in the spinning before it is wound on the bobbin.

The Renaissance tapestries were the first to include silk for the flesh tones of the face. Red was used for the lips and color on the cheeks, though sometimes pastels gave the required naturalism to otherwise plain faces. They say at the Gobelin factory that it takes at least fourteen years to train a man, and that a good average worker can do approximately one square yard in a month. This time can be speeded up considerably on a horizontal loom which is about one third again as quick. The work of the low-warp looms is consequently considerably cheaper. Perhaps they were just as rapid in the old days, perhaps not. But then or now, it is interesting to realize that practically the same method is followed as that described so very long ago by Ovid.

Modern tapestries are of various kinds, some made in the same old way with the same old patterns, some woven in the same way with up-to-the-minute patterns. Unfortunately there are lots of fakes, some that are just printed on a fabric that looks tapestry woven, some woven on a Jacquard loom. Though we in America do enjoy the fine products of the looms of France we have some tapestry weavers here in the United States who are doing really splendid things. Let us hope that they prosper so that we may all become more familiar and therefore appreciative of the fine beauty of these pictures of the loom.

England's Textiles and Embroideries Up to 1700

THE English say that spinning has been known on their island since the Neolithic Age, and no one can dispute or authenticate that statement for there is no trace of any such ancient art. Even the burial grounds of the early Britons have not provided us with the wealth of material found in Egypt. The first weaving of which we can be absolutely sure is that done by the weavers of Winchester for the Roman soldiers in the first century of the Christian era. Coming from the more temperate climate of Italy the Romans were in dire need of warmer clothing, for the ancient English winters must have been great trials of hardihood. The Angles and the Saxons were familiar with fabrics of various kinds, though we know nothing of their looms or their weaves. It is said that they had silks from the east, and linen and wool that were their own products. Be that as it may, it is quite definite that the spinning of wool and the making of it into cloth was England's first important industry.

The shroud of St. Cuthbert is one of the earliest fabrics that arouses romantic interest. Though this saint died in 687 he did not reach his final resting place in Durham Cathedral until the early twelfth century. Evidently there were various robes in which he was enshrouded at different times, the inner one being described as "a fine linen sheet well waxed." There was also a soft silken robe which was patterned (block-

printed probably) with the figure of a knight. The fragments of another robe, the most important one, of purple and crimson silk with a pattern of gold may be of English manufacture or possibly German. Though it is eastern in the style of the woven design it is not so cleverly executed as were the true Byzantine silks of that era. That it was woven for this particular saint, regardless of the place of manufacture, is proven by the pattern of large rondels which include a central throne and fish and ducks, all attributes of St. Cuthbert.

After the days of the Romans there are no further records of weaving until the time of William the Conqueror, the one date in English history that almost everyone remembers. Weavers from Normandy and Flanders followed him into England and there continued to make the wool and linen fabrics with which they were familiar. They were undoubtedly the instigators of that first weaving guild which was founded in 1080.

The most famous and interesting textile from this period is the Bayeux Tapestry, not a tapestry at all, but a really remarkable piece of embroidery, formerly supposed to have been made by Queen Matilda, the wife of the Conqueror. This complete and authentic record of the Norman invasion of England is two hundred and fourteen feet long by about twenty inches wide. It is divided into seventy-two compartments, each one telling a separate story, and the whole enclosed by a narrow border above and below on which are embroidered birds, trees, and other small motifs. This remarkable document was worked much like a sampler, using wools of various colors for the different figures. Discovered in 1728 in Bayeux in France it holds a unique place as a historical picture and as a record of the embroidery art of that age.

Though wool was undoubtedly the earliest fibre used in England there are records of cotton being known there late

in the twelfth century. It was then imported from the Levant and as they considered it to be a vegetable wool they mixed it with their own native wool from sheep. Mr. Crawford in his book "The Heritage of Cotton" tells an amusing tale regarding this cotton which supposedly came from certain Scythian sheep, whose lambs grew on stems instead of in the more conventional manner. These stems were evidently very flexible for the lambs could lean down to eat the herbs which surrounded their stalks. When they finally died both meat and wool were obtainable. That bit of fiction certainly ranks with some of the more imaginative stories told regarding the origin of silk. But fabrics for regal use were all bought in foreign countries, and in this same century after commerce had been established with Constantinople a cloth known as "imperial" was brought from there to England for the exclusive use of King John.

While Flanders and France were busy making their marvelous tapestries England turned to embroidery. This craft, which also goes back to some thousands of years before our era, had not been generally employed in the other European countries of that date, except for ecclesiastical vestments. It is an art in itself and like tapestry must be treated in a separate book. It is only included here in so far as it is of importance in the development of design in textiles. The Romans called it "painting with a needle" and that seems a fair description of some of the wonderful pieces created by the skillful embroiderers of England. By the thirteenth century the Anglican embroidery of fine silk was well known over all the western world and was as highly prized as the valuable silks from the east. In the ecclesiastical inventories of that century and the one following many of those gold embroideries were registered under correct date and titled *de opera Anglicano*.

The next century fairly teems with records of wool workers. By that time the raising of sheep was the most lu-

crative industry in England, where they had been developing fine wool since the days of the Romans. But the early weavers were apparently not too expert for the finest wool was sent to Flanders to be made into cloth there. Somewhat later the Flemish weavers were imported and a kind of factory set up near Bath. Then the church took the industry in hand and the monks at Bath Abbey wove woollen cloth that won the approval of the crown as early as 1337. Norfolk, too, had its wool weavers and the town of Worsted created a new kind of hard-twisted yarn that still bears its name.

They even made figured wool fabrics for in the accounts of Edward II one finds a payment

To a mercer of London for a green hanging of wool, woven with figures of Kings and Earls upon it, for the king's service in his hall on solemn feasts in London.

Another document that has bearing on the use of patterned fabrics is the will of Lord Dispencer who in 1375 left to his wife

my great bed of blue camoca, with griffins, and another bed of camoca, striped with white and black.

This cloth which was used so extensively in England had undoubtedly been imported from China where most of it was made at that time. (See Chapter XXV.)

Though wool was the chief native product, linen was grown in Lincolnshire, and both cotton and silk were known. By the mid-thirteenth century all the higher classes were wearing costumes of silk according to documentary evidence. Edward III, the great fourteenth century monarch, took such an interest in the progress of the weavers that with the aid of his wife, Queen Philippa of Hainault, he established silk weaving in London. He was probably the first monarch

who considered seriously the building up of a national textile industry. There was as yet no native art development and the mixture of pattern borrowed from all the more strongly artistic countries resulted in a melange not unlike the language that was evolving at the same time.

To the fifteenth century belongs that fascinating document—the will of William of Wykeham who died in 1403. Herbert Cezinski relates that among other bequests he left

to Robert Braybrooke, the Bishop of London, his silken bed “and whole suite of tapestries” in his palace of Winchester. This bed was a gorgeous affair of silk velvet, bullion and embroidery, but whether it was a piece of wooden furniture or a couch placed in a recess in the wall (which is more probable) and dressed with valances, back cloths and curtains, we are unable to say.

That not only gives a picture of the way rich stuffs were used but it suggests also their value, if they were considered worthy to be willed to a person of such estate as the Bishop of London. Undoubtedly the silks referred to were all of eastern manufacture, while the tapestries were from Flanders.

Henry VII ordered vestments to be especially woven for him in Florence, which he prescribed were to be of red velvet and cloth of gold with a pattern of roses and port-cullises. Henry VIII had been tremendously impressed with the grandeur of his meeting with Francois I on the Field of the Cloth of Gold, and immediately took an active interest in all the fabrics then being made in England. Cardinal Wolsey seconded his enthusiasm and he imported more French artisans and set about training native workmen who might be worthy competitors to those of France. But even with all this outside help the weavers in England were not able to make velvet and velvet brocades like those of Italy, which were still in such great demand. Cloths of gold and silver were

the royal selections and one monetary record of 1540 showed that the king paid "to Peycocke of London" over thirty-six pounds for nineteen yards of cloth of gold for the Princess Mary. And a yard and a quarter of silver cloth cost him thirty shillings. Those were extravagant prices in those early days.

The castles of the early sixteenth century were battlemented and siege-resisting, but they had very few of the comforts of later days. Tapestries from Flanders helped considerably to make the rooms warmer, both with their thick wool texture and their colorful patterns. The heavy foliage, the bright flowers and the many little birds and animals all woven together in a kind of glorious confusion were even more suitable than those of the sixteenth century which were so definitely pictorial. But they resorted to substitutes even in those days, for where real tapestries could not be acquired or were too expensive, they painted canvas to resemble tapestry in texture, color and pattern. The heavy oak furniture, although vigorously carved by the unskilled hand of an early artisan, did not suggest fine fabrics. Dark rich tapestries and heavy velvets were better suited to those rooms than lustrous damasks. The crude stools and benches were sometimes covered with loose pads of heavy wool, and in royal houses where velvets were not too dear those flat cushions were often made more impressive by the addition of gold embroidery.

Beautifully panelled walls soon came into vogue and furniture was carved to match. The whole room was *en suite*, for the heavy hangings and upholstery often carried the same motifs, particularly the heraldic devices that were so important. A few Italian Renaissance details were approved and added to the bulky Tudor forms. When Henry VIII saw the famous X-chairs of Italy he decided to have them copied. The English ones weren't very much like the originals, but they were then considered luxurious and were the height of fashion. The velvets and leather which were combined to

make suitable cushions added the final decorative note to those exotic chairs.

The rooms were somewhat smaller than those of the medieval castles, but as they were still dark and gloomy there must have been a crying need for color and pattern. The imported velvets used for hangings or for furniture were decorated in the prevailing foreign fashion so the artichoke reached the same popularity in England that it had in Europe. Possibly some few designs were made for the English trade, especially the Tudor rose, though that may equally well have evolved from an earlier Gothic rose in France. Rosettes, rondels, masques, medallions with heads in profile, grotesques, all kinds of lozenges, the guilloche with its repetitious curves, and entwined ropes were the favorite motifs. Embroidery was just as important as ever and in fact it was in needlework that the first motifs of the Italian Renaissance were included. Fortunately red was the best color in use at that time for tapestries, for velvets or damasks, and when combined with gold it must have been a decided help toward enlivening those somber rooms.

Succeeding her ambitious father came the most famous of English queens, Elizabeth, 1558-1603. This glorious period is often called the English Renaissance, and it merits the title for two reasons. First there was an aroused appreciation for the finer arts of living and even the middle classes discovered the advantages of personal comfort. The second reason is that most of this art impulse was due to Torriagiano, the Italian, and other fellow-artists who introduced to the English and made them like the classicism and the elegance of the Italian Renaissance. Its lavish richness and the astounding scale of the dignified designs appealed particularly to the English taste and they began to clamor for the splendid damasks and brocatelles and velvets of Italy.

Elizabeth, who was busy building up a really important trade for England, sent out ships loaded with wool. In turn



PLATE 27. An English crewel embroidery worked out in tones of green on a cloth woven with a linen warp and a cotton weft. The traditional wandering stems and large flowers are ideally suited to the display of intricate stitches.

Courtesy Victoria and Albert Museum, London.

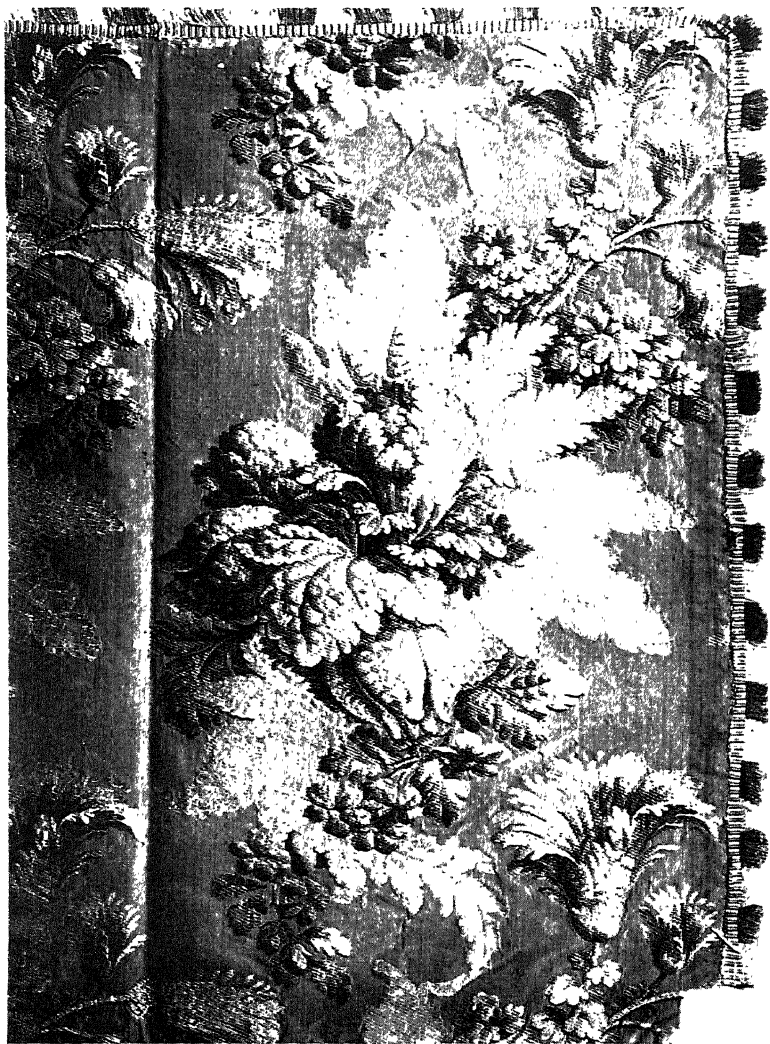


PLATE 28. A very rich early eighteenth century brocade of Régence design. The mixture of conventional and realistic motifs is indicative of a design by Jean Revel. The polychromatic pattern is woven over silver lamé.

Courtesy Musée Historique des Tissus, Lyon.

they brought back the treasures from the sunny lands of the Mediterranean and later those of India and the East. Wool weaving was still carried on largely by the weavers from Flanders and the Huguenots who fled from France in the late sixteenth century. England had also welcomed the persecuted Spaniards and the religious refugees from Holland. With all these foreign artisans the looms of England steadily progressed, even if there were no distinctive patterns for them to weave. Draw-looms were set up in Norwich in 1567, and shortly after that the Hollanders settled there and in Cold-chester. Cotton was forging rapidly ahead and the story of its progress will be found in Chapter XIX.

The furniture carved from the native oak was massive and ornate. Enormous bulbs that were quite as magnificent and portly as the landed gentry of that age formed the structure for tables, beds, and cupboards. In contrast to the deep shadows of the curiously carved bulbs was the strap-work which was the almost universal decoration for all flat surfaces. Those hardy people in their elaborate costumes—men and women were equally gorgeous—needed heavy furniture and decorative fabrics to complete the picture. Queen Elizabeth, with her wide-spreading skirts, huge ruffs and wide sleeves, just could not have enjoyed a chair like those made by Hepplewhite some two hundred years later. Nor would she have liked the fabrics he used any better than the chair. There was even a special farthingale chair built during her reign without arms and with a shallow seat to accommodate the commodious skirts of the ladies of fashion.

Only a few pieces had hard and tightly stuffed upholstery of either leather or plain velvet. The beautiful embroideries which continued to be more significant than the weaving were used occasionally for furniture as well as for hangings. Everything was covered with pattern, walls, furniture and costumes. The beds were massive, with or without a tester, and the quality of the drapery depended only upon the

amount spent upon it. Even the poorer people with their newly awakened interest in homely comforts had embroidered curtains for their beds—what matter if they were less fine than those of royalty? Those were the days of early England that give us a dashing and romantic picture. The queen gorgeously arrayed from her proud red head and her wide lace ruff to her feet dressed with the silk stockings she demanded. Her court was brilliant, too, and in their splendidly colorful costumes must have presented a striking contrast to the dignified rooms with handsomely panelled walls, heavy furniture and hangings of rich dark velvet and brocades.

Elizabeth, who introduced the seventeenth century to England, was followed by James I and Charles I, then the Commonwealth under Cromwell in the middle of the century, and finally the Restoration of Charles II, which era stands for the essence of elaboration in design. As this whole century is sometimes dubbed Jacobean (the Latin word for James is *Jacobeus*) perhaps we might just as well treat it that way, too. The early part of the period was really a continuation of the Elizabethan style with a little less ceremony and a gradual toning down of over-pompous lines. Some think this Jacobean period produced the first true English style, though it had not long been free from Italy and was guided largely by the Dutch and Flemish taste. Most of the fine fabrics they continued to import and the only evidence of a national artistic expression was in the embroideries. At that time it was the fad to make long bands which were suitable for application to curtains or furniture. The designs were still confused and lacking in style, though they had been derived from the best of the Indian prints. A waving stem usually ran lengthwise of the band and from it branched different leaves and flowers.

As soon as the factory at Mortlake was established the tapestries of native manufacture were much sought after for

upholstery. *Turkey work* came into vogue, and the chair which was upholstered with it was also trimmed with elaborate fringe and gimp and sometimes tassels. This was a type of weaving with a thick wool pile and eastern patterns, all intended to make it look as much like an Oriental rug as possible. Pieces were especially designed just to fit the back or seat of a chair or settee.

James I must be credited with an attempt at sericulture, but due to the inclement weather in England and unskilled workers he was not successful. The weavers were making steady progress and the simple heavy silk or wool serges or satins of English manufacture were often found in combination with the damasks and brocades of Renaissance patterns and the brilliantly colored velvets of Italy. Cloths of gold or silver, imported from Turkey or Cyprus, were used in greater abundance than ever before. The richness of those metal cloths had long appealed to the English kings who used them for their coronation and ceremonial robes. There are even tales of a room in the Tower being lined with cloth of gold wherein the king donned his robes of state. His horse, too, was caparisoned in gold, and the grim old Abbey made resplendent with it for such momentous occasions as the coronation of a new king.

Charles I, who was a real patron of the arts and a friend to all the artists, can well be remembered as the one who, at Rubens' suggestion, bought Raphael's cartoons for the weavers at Mortlake. He loved beauty and it was during his reign that more refinement was apparent in rooms, in furniture and in textiles. Furniture was lighter in scale, the bulbs had been slenderized, and a greater variety of design was noticeable. Chairs were upholstered more cleverly, fringes were straight, and the colors a bit clearer, and at the same time more subtle in harmony. Printed fabrics were the talk of the time and velvets and brocades and even tapestries were of secondary importance for the moment. Fabric patterns

like those on the continent blossomed with realistic roses and fleurs-de-lis, or even pineapples enclosed in heavy ovals. It was during this reign that Inigo Jones, who had been stirred by the glories of the Renaissance, adapted the Italian classicism to the English taste and so routed out the last vestige of the Gothic influence. Rubens was looked on with favor, as the king was his friend and patron. Van Dyck, who did that splendid portrait of Charles I which is such a colorful document of contemporary fashion, lived for some time in the English court and was knighted by the king.

The rise of the Puritans was a decided set-back for they did away with everything elaborate or decorated in the old style. They used plain leather and plain velvets or plain wools for their stiff straight chairs, though the large nail-heads with which they were finished were really sufficient decoration. Some few were covered with simple embroideries or tapestries. With the Restoration came a deluge of pattern and a mixture that was not always harmoniously blended. No fabric was too elaborate for costumes, nor any too rich for upholstery or hangings. Handsome fringes, ingeniously knotted, trimmed the canopy of a bed made for the king, and ostrich plumes topped the corners. Curtains of richly embroidered silk hung at the back and sides. Other beds were made in the French manner with upholstered head board and posts covered with satin. Elaborately constructed benches, gilded or silvered, were covered with the rarest of imported silks. This age corresponds in time, and a bit in elegance, to that of Louis XIV in France. But remember that France was the leader and setter of fashions at that time and England like the other countries in Europe followed in her wake.

A kind of Hungarian embroidery known as *fiamma*, or flame-stitch, was made by the ladies of England late in the seventeenth century. The usual pattern was made up of large zig-zag lines which covered the whole ground cross-

wise. Despite the diagonal lines of the design the embroidery was up and down with fairly long loose stitches that overlapped, giving a vertical effect. The same stitch was used for more pictorial patterns, some copied from tapestries, and others being conventionalized emblems—the rose of England or the thistle of Scotland. Though occasionally made of all wool or pure silk, the usual thread was heavy silk floss, many tones of one color being shaded together and then blending into the next one, as yellows into greens.

The very end of the seventeenth century brought a strong Dutch influence to England when William of Orange and his wife Mary were ruling jointly. Though many handsome fabrics were still imported and used, embroideries and prints were the things which caught the people's fancy. The queen was largely responsible for the increased interest in hand-work, just as Madame de Maintenon was in France. She even favored the *petit point* and *gros point* of France for upholstering small chairs or settees. When the ingenious ladies wanted the effect of the embroidery to be extremely rich they mixed silk threads in with those of wool for highlights.

Crewel embroidery was the real fad of that period. Using a plain cloth of cotton or linen or wool for the base, trailing vines and flowers were embroidered on it in rather dull and somber tones. Blue, brown and a madder red seem to have been the most admired, but it is quite likely that a good bit of the part that is now blue was originally green. For yellow was always a fugitive color and real green had not yet been discovered.

This crewel embroidery, so-called from the name for worsted or wool yarns, was made with long stitches of different lengths. While the early patterns were quite heavy, those made nearer the eighteenth century were finer and somewhat daintier. The tree of life or the Chinese river provided the central theme, that of a brown or blue stem wan-

dering the length of the piece embroidered. Various finer branches from the main stem carried flowers or leaves of unusual shape or size. Practically all of the motifs were Indian, Chinese, or Persian in derivation. Most of those old Jacobean embroidery patterns were full of interest, both in composition and coloring, and they were well adapted to their use for hangings or curtains or upholstery.

There was a strong Chinese influence that was manifest at the end of the century in furniture, bibelots and textiles as well as in embroidery. Queen Mary, who was really the first queen to take an interest in the furniture and accessories used in her home, had set the fashion for collecting odd bits of porcelain and ivory and displaying them in a cabinet built especially for them. The tea-table and the china-cupboard were other great innovations of that period. The handsome furniture, most of it made of lacquer or marquetry with intricate and decorative designs, had to be combined with equally elaborate textiles. The beds of that era in England like the beds of France were a tremendous stimulus to the textile industry because they all required so many yards of material. The canopy was sometimes covered with velvet and finished with magnificent rosettes and pompoms. Some beds were festooned in light silks and others hung with quilted fabrics, but the simple oak beds were most often decorated with the *palampores* from India.

England's silk weavers were growing more expert due largely to the fact that the Revocation of the Edict of Nantes in France had driven so many skilled weavers to her shores. In 1697 Parliament was forced to bar the importation of further silks from France, and four years later those from China, India and Persia were also excluded. The foundation was thus laid for the splendid silks of the eighteenth century. Though King William had little use for Louis XIV of France he was more than glad to welcome his master craftsman, Daniel Marot, who had been driven from his native

country. The heavy architectural motifs, the shaded floral sprays and the extremely ornamental baroque designs of that period were for the most part inspired by this Frenchman. Sir Christopher Wren and Grinling Gibbon were two other men important in the development of the arts of the late seventeenth century, though architecture and handsomely carved wood panels were their media rather than textiles. True to tradition England's embroideries continued to be more noteworthy than her woven textiles right up to the eighteenth century.

CHAPTER XVIII

The Perfect French Fabrics of the Eighteenth Century

1

THE ROCOCO STYLE OF LOUIS XV

WHEN Louis XIV died his great-grand-son who succeeded him was but five years old. The eight years that followed while Philippe d'Orleans as regent controlled the state form a preface to the real reign and style of Louis XV. The court followers had grown exceedingly weary of the dullness of the religious life which the old king had forced on them. They sought gaiety and fun and brilliance so diligently that the excesses of the Regent and his followers have established a record for extravagance and indulgence. Pleasure was the key-note and the era of the Regence appeared to be but one long series of entertainments, balls, operas, plays, concerts and gambling. Though no new style was actually created in this turmoil the transition from grandeur to the restless ornamentation of the Louis XV period is often credited to the eight years of Philippe d'Orleans' rule. Ornateness was the outstanding contribution and the rather heavy introduction of the rock and shell was a fore-runner of the rococo avalanche to come.

Louis XV, the new king, had none of the greatness of his great-grand-sire and none of his governmental ability. One

historian describes him as a "handsome man of the boudoir type." That he was never really interested in anything may be one explanation for the restlessness and constant movement which is an identifying characteristic of the designs of this period. That and the fact that the style was born during the giddy days of the Regence. Louis was completely controlled by women and there were three who were powerful influences at various times during his long reign. When he was but a lad he was married to Marie Leczinska, the daughter of a deposed Polish prince. She was considerably older than he, and a rather dull person we are told. She did, however, provide him with ten children in as many years, by which means she kept firm control on her position as Queen of France. The list of the ladies favored by the king is a long one, but the two outstanding figures who represent to us the court of Louis XV are the Marquise de Pompadour and Madame du Barry.

Pompadour is the most romantic character for she was trained for her position and having achieved it she carried on remarkably well. That she was also a lovely and charming lady is evidenced by her many portraits, particularly those done by Boucher, which are distributed throughout the art galleries of Europe. Despite her extravagances she was a financial genius with a remarkably level head. She was the supreme power in France and used her prerogatives to the fullest. The *École Militaire* at Sèvres which Napoleon later attended was one of her ideas. At the same time she was a liberal patroness of all the arts and helped obscure artists to rise to renown. That the style she endorsed was over-ornate and yet full of realism was but the expression of the times. One important fashion which was fostered by Pompadour was the rising tide of enthusiasm for everything Oriental. As one of the heaviest investors in the *Compagnie des Indes* she naturally favored all importations from the east. Her admiration for the exotic foreign styles led to the *Chinoiserie*

which was such an important phase of the Louis XV period. For twenty years she was the power beside the throne and to her must be credited most of the progressive steps taken by the king. Still a favorite and in her prime she died when only forty-three.

Madame du Barry, her well-known successor, was very different in type. She was quite as much a leader in the world of fashion, but never troubled her pretty head with affairs of state. That the old king did not trouble with them either meant nothing to her so long as his shame and growing poverty did not interfere with her supply of jewels and fine gowns. But with all her vanity she was devoted to the sad old monarch and wanted to be with him when he died in the spring of 1774. Small-pox ended the career that had had such a gay start, his vanity and frivolity apparently rewarded by that loathesome disease. If Pompadour was the exponent of the true Louis XV style, du Barry was really typical of the Louis XVI era, for the return to classicism started long before that weakling ascended the throne as king. She introduced the dainty patterns, the fine stripes and the delicate silks with finely brochéd nose-gays that belong to the later eighteenth century.

The change from the classic grandeur of the Louis XIV style to the romantically frivolous fashion under Louis XV indicated also a difference in intellectuality. Under the feminine control all designs took on more grace and charm and the whole reign was definitely picturesque. The stately rooms and dignified gardens of the Sun King's reign were now backgrounds for playful scenes and rollicking picnics. The architects and decorators of the period showed great ingenuity in their transformations from the sometimes awkward creations of Louis XIV to the more human and realistic fashions of the eighteenth century. This was the beginning of the enthusiasm for small things, more intimate rooms, finer details, delicate fabrics, fragile furniture and a veritable flood of minute

ornaments. Realism was the key-note in the patterns for textiles.

Instead of the splendid sweeping curves of the baroque era there developed a charming disorder with a kind of one-sided balance that added to the effect of playfulness. There was scarcely a straight line to be seen in any fabric, any more than there was in the furniture. It was the age of scrolls, curves, floating ribbons and naturalistic flowers that were beautiful in form and color but lacking in the subtlety which later developed. Splendid fleurs-de-lis replaced the heavier flowers of the previous period. Queen Marie Leczinska at one time favored undulating stripes made to look like fur, supposedly reminding her of her native land, but that fad did not last long.

The excessive use of rocks and shells in motifs that the French called *rocaille* led to the full development of that style by the middle of the century. The term *rococo*, though derived from the basic rock and shell combination, included all varieties of scrolls and naturalistic flower forms for which that era is famous. There were also Cupids and architectural fragments put together in weird combinations. Fanciful trees and clouds and water-falls were all connected by series of fine garlands. Ribbons were spread in long wavy lines or tied in bow-knots to decorate multi-colored nose-gays. Tiny baskets of minute flowers, love-knots and doves were all reflections of the taste of the Marquise de Pompadour. Later came the celery and the endive from the garden, and finally small scenes with men and maids at play. The patterns were more refined than the fulsome baroque glories of Louis XIV but they were also more extravagant in effect. No matter how childish the Cupids and doves might appear the final ensemble of the pattern was highly sophisticated.

The expeditions of the Compagnie des Indes stimulated the French artists for each voyage the merchants brought back more beautiful damasks, porcelains and lacquers. But

oddly enough, the designers seldom copied the fabrics from the Far East. Instead they pictured the Chinese figures and motifs as they fancied them. The dragons, the parasols, the long-tailed birds which formed such a prominent part of the Chinoiserie patterns might never have been recognised in China. Quaint landscapes in miniature, with no thought for perspective, were usually a combination of French foliage and Oriental architecture. Chinese figures were poised on branches of trees as though they were monkeys, and fantastic pagodas and bridges were mixed with boats and swings. All of the patterns in this manner were classed as *Chinoiserie* whether they included only one Chinese vase or cloud or a myriad of Oriental figures. *Singerie* was but a different phase of the same idea wherein monkeys replaced human beings. Those monkeys, seen at play or at human tasks, were always delightful for they were rendered with a most amusing flare. *Genre* scenes developed from the Chinoiserie idea and French peasants or ladies and gentlemen of the court were represented in various moods. Architectural ruins stood amid glamorous gardens and balustrades served as backgrounds for troubadours.

The designers finally turned to ceramics for a new inspiration and with fine meticulousness reproduced in textiles the motifs which had caught their fancy. Dresden china offered them dainty floral patterns and birds and bow-knots all charmingly blended together. The little bouquets which were sprinkled over so many silks were frequently referred to as "porcelain flowers." Under the du Barry influence fine gold or silver was often added to the most delicate design. Brocades woven with flat metal threads termed *lamé* were so arranged that golden bow-knots tied miniature nose-gays, or vari-colored flowers were set on narrow gold stripes. Altogether it was a gay style, symbolic of the air of the entire court. They lived each day to the fullest for they all sensed the rising cloud of disaster that was approaching. Remember

that it was this king, caring only for the day and what pleasure it could bring, who said "*Après moi, le deluge.*"

This is one period in which everyone took a great interest in the decorative appearance of the houses. The smaller and more intimate rooms may have been less grand but they were more beautiful. Handsome brocades still covered walls as they had in the previous century but the patterns were finer and more filled with restless movement. It was not until the middle of this reign that the fad for *boiserie*, or elaborately wood-panelled walls, came into vogue. Full draperies of taffeta or brocade were edged with fringe or with a brocaded border and the lambrequins, though heavily laden, were in excellent taste. All the silk looms at Lyons were working at top speed and some of the finest brocades ever made were being turned out by those skilled weavers. The king had many places of residence besides Versailles and each one of necessity must be decorated in the height of fashion. Then, too, there were the smaller city palaces and chateaux belonging to the nobility. The pace set by the king had to be followed regardless of the consequences. So the weavers of Lyons toiled on ceaselessly to gratify the whims of fashion.

Beds were not quite so important as the previous king had made them, but they were trimmed in just as elaborate a manner. Generally speaking they were lighter in structure and more becomingly draped. With the scrolled head and foot boards upholstered with elegant brocades the narrow beds were occasionally set in a niche trimmed with draperies and a valance of the same style as the windows. The smaller beds, which were at times placed lengthwise along the wall, had no real canopies but their full draperies were caught back to the wall by a gilt crown or semi-circle topped with ostrich feathers or tulips or held up by gilded Cupids.

The furniture fabrics indicated the change in style as definitely as anything else. The early Louis XV chairs and sofas

which were only slightly more feminine than those of the previous period had been upholstered in Genoese velvets or occasionally in striped silks. As the chairs grew lighter and more fragile so did the materials used for covering them. Fine satins and taffetas and dainty brocades were charming but perishable. The small arms extended only half way because the elaborately wide skirts of the current fashions could not have been squeezed into narrower spaces. The men's clothes, too, were important for they were as colorful as those of the ladies and of just as rich textures. Small patterns were in order there, but the heavy gold embroidery on cuffs and pockets and down the edges of the wide-skirted coats added to their elegance. The windows, too, were swathed with voluminous draperies of fine brocades and taffetas quite in keeping with the rest of the over-ornamented rooms.

There was a remarkable range of colors in this period with charming combinations within one pattern. White and gold were the favorite background tones so the delicate green and pale rose and blue and dainty yellow were all pleasant in contrast. The colors were not the strong brilliant hues of the previous style and yet they were not pale or washed out. The floral designs were woven with rather vivid naturalistic flower tones and full stress on the differences between light and shadow. Grey and yellow, and green and gold on white were two popular combinations late in the reign. Pompadour selected rich soft colorings for the floral brocades when used on the beautiful furniture with gilt bronze decorations. Her costumes were all extremely subtle and rather subdued in tone including warm greys, brown and mauve. Her favorite hue, however, and the one that still bears her name was a peculiar off-shade of crimson. Du Barry, too, favored warm tones with special emphasis on a dull rose. Pastels came later into fashion and delicate pinks, blues, whites and yellows were the approved backgrounds for either costumes or rooms.

From this period there are many names that stand out

with distinction. There was, for instance, Watteau who, with his shepherds and shepherdesses at play or deeply engrossed in their amours, pictured the artificial spirit which animated the court. Then came Lancret, and later Fragonard who did such really exquisite things before he felt the decadent influence of the frivolous court. Boucher and Greuze were both protégés of Madame de Pompadour. Chardin and de la Tour and Nattier made delicate portraits of the beautiful ladies of the court, some of which have rare charm despite their similarity.

Of the fabric designers Meissonier, who made his best patterns during the Regence, is credited with being the one who introduced *rocaille* work. Huet and Oudry worked mostly on toiles (see Chapter XX) and tapestries while Jean Revel and Pillement and Philippe de la Salle made their designs for the silk weavers. Jean Revel the younger was an architect with a leaning toward landscapes. He was the leader of the group who modeled floral motifs with half-tones to give the full value of light and shade, and one of his contemporaries has called him the Raphael of fabric designers. His patterns always contained some architectural elements as well as bowls or baskets filled with fruit or flowers.

Pillement (1728-1808) was the exponent of Chinoiserie. He had a lively imagination and cared little for traditions. He ignored all rules for symmetrical balance and forgot there was a law of gravitation. A pagoda might be perched on a fragile branch of a tree and a fisherman's line seem to disappear in the clouds. His patterns, some almost caricatures full of humor and fancy, were a delight to the weavers of Lyons with whom he worked. He greatly influenced the other designers though very few of them ever developed the same flare.

Philippe de la Salle, his contemporary and a pupil of Boucher's, was called a painter of the loom. He attained his

fame by the plastic modeling and gorgeous colorations of his designs. His patterns were free and ornate but quite unlike the whimsical style of Pillement. He had a brilliant imagination which led him to design rustic scenes wherein pheasants, vases and flowers were united by fluttering ribbons or cords and tassels. He worked out finely spaced panels or musical instruments all piled together to form a pleasing mass and did the same with tools from the garden. His flower patterns always excite interest because of their grace and naturalness. That may perhaps be explained because he was a botanist and at the same time thoroughly understood the difficult technique of weaving. He designed most of the fabrics used at Fontainebleau and Le Trianon without any touch of gold, his colors being sufficiently brilliant and sparkling.

Fine brocades and damasks which showed the great skill of the designers were in high favor for upholstery though Persian chintzes and toiles were used in more informal rooms. Taffeta was especially popular because of its crisp but fragile loveliness. Tapestries woven at the different ateliers for particular suites of furniture exhibited patterns similar to those designed for silks. This was one of the most brilliant periods in all the history of textile design and it would be difficult to find silks finer in texture and color and quality, and the designs, though possibly not to your liking, were full of animation and charm.

2

THE CLASSICISM OF LOUIS XVI

As the Dauphin and grandson of the previous king, Louis XVI had married an Austrian princess, Marie Antoinette. Most famous of all the queens of France she unfortunately won the enmity of the whole French nation. Cir-

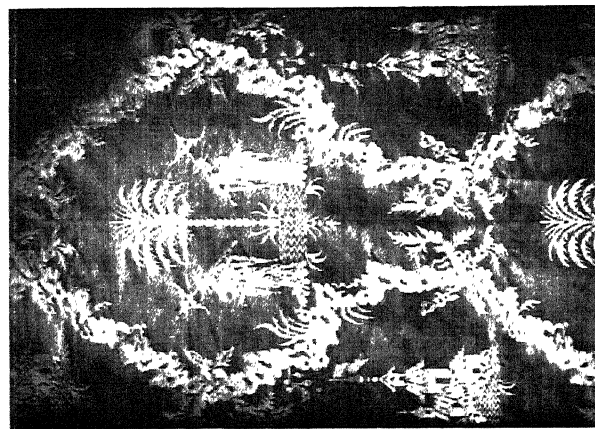


PLATE 29. *Left.* A charming chinoiserie silk damask from the Louis XV period.

Courtesy Musée Historique des Tissus, Lyon.

Right. A Louis XV silk brocaded with golden-brown chenille on a salmon-pink background. This tisu à la fourrure was made in honor of Queen Marie Leszczyńska.

Courtesy Musée Historique des Tissus, Lyon.

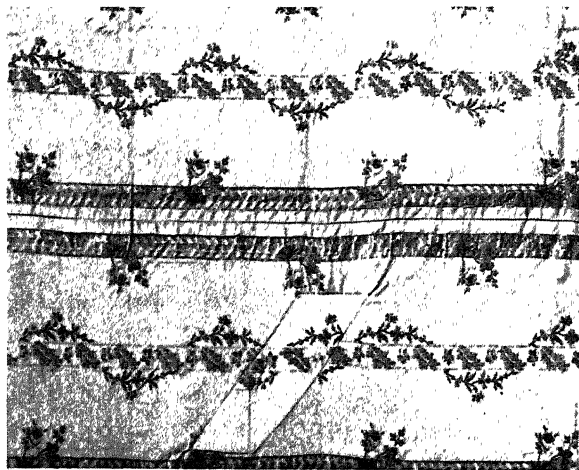
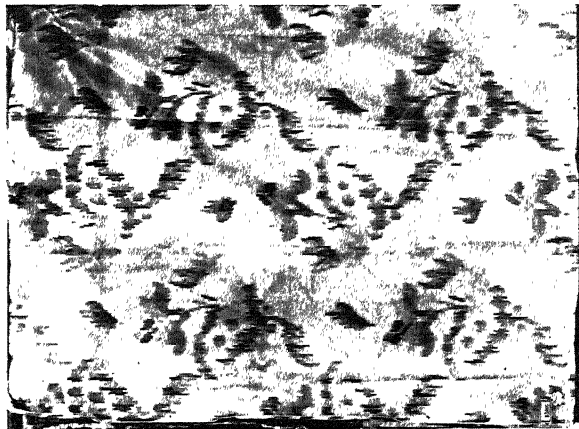


PLATE 30. *Left.* A delicately striped brocaded taffeta of the late eighteenth century.

Courtesy Metropolitan Museum of Art, N.Y.



Right. An all-silk warp weave known in the Louis XVI era as *chinois à la branche*.

Courtesy Musée Historique des Tissus, Lyon.

cumstances which were quite beyond her control were already against her and she did not help the situation any by her constantly reminding the people that she was Austrian and not French. The new king enjoyed little more popularity for he was coarse, stout, short and square, and with none too keen an intellect. He much preferred tinkering with a lock to making governmental decisions. The French people were poverty-stricken for they had been oppressed for many years, and a revolution was brewing long before he came to the throne. Had this young man been half the man Louis XIV was there would never have been such black pages on the history of France as were made during the Revolution. But he could do nothing to stem the tide which was sweeping over the whole country and plots against him and his régime apparently seemed unreal to him. He was far more interested in the sports of the chase and in his appetite than in the growing antagonism of the French populace.

To have a charming young woman as queen was a novelty and a real inspiration to the artists who strove to please her. Even as the Dauphiness, Marie Antoinette had had a great influence on the trend of style. She delighted in simplicity, she liked the classical details that the leading designers were introducing about that time. Quite a while before the death of Louis XV the glories of the rococo style had passed into the limbo of over-accented fashions. For the first time in many years it was a queen and not a courtesan who turned the fashions to suit her taste.

Instead of grand buildings and wide-spreading palaces there were homes. Small rooms, *petit salons*, boudoirs, all were in demand. Even the residences of the royal family became smaller in scale and precious in decoration. Le Petit Trianon at Versailles was quite in keeping with the spirit of the day. Le Grand Palais was too grand, too overwhelming in its magnificence. Marie Antoinette and her ladies sought the simple life and in their amusements liked to make believe

that they were artless *bourgeoisie*. Le Petit Hameau was the result of those royal inclinations and there they had a mill, a dairy and a miniature farm. The ladies of the court and the queen played like children enjoying their roles as shepherdesses, dairy maids or pretty farmers all bedecked in colorful cotton dresses. It was in this ingenuous and child-like atmosphere that the queen found enjoyment and could forget the overhanging cloud of the revolutionary spirit that was growing among the poverty-ridden people of France.

The change in designs from the rococo of Louis XV to the classical simplicity of Louis XVI seems rather abrupt, but before the old king died the new trend had appeared. The finer fabrics of the late Louis XV era owed their charm to a reborn interest in classicism. A feeling for reserve and restraint was occupying the attention of the designers. The artists of the day had turned back once more to the glories of Greece and Rome. But this time it was the excavations in Pompeii and Herculaneum which intrigued them. The full beauty of the classical art was rendered in a more effete manner, with fuller acknowledgment of the power of the feminine influence that has always been apparent in French art. The new court was interested in this display of reticence which was in such contrast to the forwardness of the glowing fabrics made under Louis XIV and Louis XV.

This reversal to classicism produced a quantity of bi-symmetrical designs and the full blossom of the rococo was entirely submerged by the quiet severity of the new style. Refinement in drawing was essential and the remarkable distribution of pattern and the delicate coloring contributed to the appearance of dignity. There was much less naturalism for things smaller than life were the vogue. The entire court became interested in little things, in the minute details which were so important. Small *objets d'art* found their proper place with furniture that was almost miniature in scale.

Occasional lace-work within a pattern reflected the preced-

ing style, but straight lines and small scattered motifs symmetrically placed were more typical. An all-over pattern was occasionally worked out in a reversed oblique manner, a conventional flower or leaf swinging to the left on one horizontal row and to the right on the rows above and below. In the earlier days of this reign the vertical lines were broken or wavy still reminiscent of the brocades of Louis XV, but by 1785 nicely spaced stripes interrupted by small bouquets had replaced them. Those dainty little floral motifs, miniature in comparison to their natural size, were tossed with what seemed a haphazard hand over the colorful stripes. Diamonds or zigzags made by floating ribbons or trailing vines were part of the elegant classical revival.

The queen's interest in her farm led to a deluge of agricultural scenes and motifs in all designs. The shepherd's hat and crook were woven into the same pattern with cages of love-birds, or with a bow and a quiver of arrows. Musical instruments in amazing confusion were reproduced in silks as well as in *boiserie*. A flaming torch might appear in the same design with a cornucopia spilling out riches of fruit or flowers. Garlands, perhaps of pearls, tied one bit of classical design to another and cherubs played on musical instruments or wielded agricultural tools quite as they did in the colorful friezes of Pompeii. Laurel was the leaf used most often for the garlands, for bouquets, and it could even be found with lyres or rustic trophies. In addition there were also the Chinese motifs that had carried over from the patterns made by Pillement during the reign of Louis XV. That famous artist by the way became court painter to the queen, Marie Antoinette, though he was doomed to die in poverty in Lyons some years later.

The silks of this era were exquisite, though they had lost some of the magnificence of the previous period. Lyons was still the center of the weaving industry and was still turning out elegant fabrics. Brocades, satins, armures, lampases and

fine velvets were all in great demand. The silks with shadowy designs that some one has described as "washed out aquarelles" were known as *chiné à la branche*. (See Chapter XXV.) Most of them with light backgrounds and softly colored patterns were not unlike crisp taffetas in texture. Broché silks were quite as popular for costumes as for decorating *petit salons*, and sometimes they were the same. Flowers or feathers arranged in neat rows were the favorite motifs for the men's voluminous coats. Though the ladies wore silks of all kinds for court functions the vogue for cotton was still in the ascendancy. The queen with her fondness for a pastoral life had revived the fad for *indiennes* and *toiles*. They seemed better suited to a romp through the woods of Versailles or Fontainebleau, and of course where the queen led the court must follow.

The small rooms were lined with brocades or damasks set in tightly stretched panels, and dainty taffeta draperies hung at the windows. Very often an entire room was done with only one fabric, the same cloth being used for walls, curtains and upholstery. Instead of the elaborately draped curtains of the previous period they were hung in long straight lines or were looped back simply. The beds that had been such an important part of court life during the reign of Louis XIV were now smaller and more delicate. Head and foot of equal height were frequently upholstered with the same fabric used throughout the rest of the room. When a canopy was included it was but a semblance of its former glory. Draped high on the walls, swag-like curtains festooned down to each end of the bed which was placed lengthwise against the wall. Frequently no back curtain was used and rolls at head and foot supplanted pillows.

Tapestries of fine workmanship were favored by the queen and the fables of La Fontaine woven into dainty patterns were her selection for upholstery. The factory at Beauvais was turning out admirable things, a whole series of

scenes being designed for use in one room, each chair being different and yet all bordered and colored in the same way. Though most of the designs were in miniature to accord with the current trend of style they also wove large pictorial scenes for wall-hangings. The paintings of Boucher were frequently copied in such fine tapestries that at a distance it is difficult to distinguish between the fabricated picture and the original.

The colors of this period were similar to those of the later days under Louis XV, for they were all subtle in hue. Brilliant tones were quite passé, even in the white and gold rooms of Versailles. Gold and mulberry, gold and dull red, dark blue and silvery white, all the off tones of white with stripes or broché patterns in blues, silver, dull reds and purples were the favorites. Sèvres plaques or Wedgwood with Graeco-Roman figures were inserted in the richly polished furniture and medallions similarly modeled were added to the pale blue or silver-grey brocades.

During the latter part of the eighteenth century there were many artists of merit including Pillement and David. To the latter can be credited the enthusiasm for the classical styles of Pompeii. He spent some time studying in Italy and on his return to France inaugurated the idea of straight and slender lines with chaste ornamentation. It was a severe but exquisite style, one admirably suited to the times. Gabriel Trichard, the designer; was one of the chief exponents of the patterns with sprays of flowers or agricultural implements or bits of gardens all connected with picturesque swags. He revived the rondel, though in such a new form that the relationship seems a bit far-fetched. Cupids blowing on pipes, in a doublet, were enclosed within a circle or a slightly indefinite round form banded a basket of flowers.

Of all the designers of the eighteenth century Philippe de la Salle was undoubtedly the most famous. He had an incomparable skill in creating brocades, damasks and broché

taffetas, and his splendid compositions have inspired many later designers for he was an artist whose hand never hesitated. It was he who drew the rustic patterns, the musical instruments combined in an amazing melange, and the shepherds and shepherdesses in amorous fantasies. Turtle doves were almost a trade-mark on certain patterns, and dotted backgrounds, swags, waving lines of lace and bow-knots and cords and tassels were all incorporated in his intricate designs. But the Revolution ruined him and he died in 1805 at the age of eighty in very poor lodgings, his fame and fortune quite gone. Camille Pernon is inseparably linked with de la Salle for it was he who wove the magnificent designs created by the delicate skill of that master craftsman.

Among his finest silks were those intended for the boudoir of Marie Antoinette at Fontainebleau. That poor queen never saw them for they were not quite finished when the Revolution brought such an abrupt termination to the great silk works of Lyons. It was not long after that that the new government thought they could proceed more rapidly if the head of the "widow Capet" was added to those other thousands that had already been counted on the guillotine. But those splendid silks were finished later and you can see them, still brilliantly colorful, as they hang in the bedroom of the Empress Josephine at Fontainebleau. Their garlands of fruit, groups of musical instruments, and pastoral motifs are all woven in the softest tones of green against a lustrous white satin background. Those silks of de la Salle's marked a new phase, one that was the basis of the Directoire, the first artistic age to follow the bloody days of the Revolution.

To sum up this whole period and to make it all a bit simpler the *semé* patterns, stripes, bow-knots, and the fineness, the daintiness that had never before been evident, might be considered the ear-marks of this, the last great court style of France.

English Chintzes and Linens

SOMEHOW we always think of England and chintzes and embroideries rather than England and velvets and brocades. Not that they did not use quantities of rich stuffs, and made some, too, but England's embroideries are distinctive and her use and manufacture of chintz notable. During the seventeenth and eighteenth centuries English prints gained a hold that they have never let slip. Today there are no modern fabrics we set more store by than the chintzes and hand-blocked linens made in England. Their colors are softly blended, their workmanship so reliable, and their designs so delightfully true to tradition that they add a touch of old-world charm to any room in which they are used.

As already recorded cotton had been introduced into England as early as the twelfth century though the weavers preferred to work with wool and linen. In the year 1498 it was reported that cotton dresses were in favor though no one tells us much about their quality or if they were patterned or not. Early in the following century the printed cottons from the east began to pour into England and almost at once they caught on. They were a thing that *everyone* must have. They were then mostly called calicos and the various ways of spelling that name are greatly appreciated by all those who are a bit weak on their own spelling. There is a reference in 1540 to a *kalyko* and one from the following year to *callicut*, undoubtedly the same fabric. Quantities of these

painted and printed cloths were being imported from India for their Oriental gaiety and clear coloring made a strong appeal to the English.

The native merchants soon began to question why the Portuguese should reap all the benefits of this new trade, and so set about sending out their own ships and establishing their own trading posts for England. This led ultimately to the granting of a charter and the founding of the East India Company in 1600. This famous company imported at first only the painted and printed cottons from the east. But in the development of their trade they grew aggressive and gathered in many other products. They gradually extended their posts to cover most of the territory in the Indian Ocean and even reached farther to the east. After that their cargoes were more varied and their riches increased steadily. All might have been well but for their great rivalry with the Dutch Colonists and traders whose first aggressive move forced them out of Callicut. Then they were pushed out here and driven out there until in 1682 they finally gave up their holding in Java and withdrew altogether in favor of the Dutch. There had been too much going on at home to spare men and the time needed for the building up of these little known colonies of the East. Their peak in trading was reached during the reign of William and Mary in England, and with the coming of the eighteenth century their business decreased, their goods were less valuable, and their commerce with the east gradually came to an end.

It was early in the seventeenth century that the wool merchants began their protests against the importation of printed cottons. They were becoming so popular that people were using less wool—and that was England's stand-by. But Charles I liked their gaiety and so he issued a proclamation permitting the importation of "painted calicoes." That made them more popular than ever and the old word *chint* gradually evolved through *chints* and *chintse* to *chintz*. (See

Chapter XXV.) A letter to an agent at Surat written in 1641 explains the situation in England at that time.

The quilts of chintz being novelties produced from £ 5 - 5 s. to £ 6 the pair, a further supply therefore desired and both as regards those and the Chintzes more should be made with white groundes and the branches and flowers to be in collors, and not to be (as these last sent) all in general of deep red ground and other sadder collors.

They had had quite enough of dull and somber colors, and the brightly flowered patterns were decidedly the vogue.

Most of those early prints had followed the true Indian designs with various interpretations of the Garden of Paradise. Against the light background the pattern was printed with a great variety of colors. Large trees grew from solid earth that was filled with minute designs, and monkeys and birds added a fanciful touch to the more open spaces toward the top. All of the flora and fauna of the east were thus introduced to England. Those richly colored prints with their strong central motifs were also the great source of inspiration for most of the Jacobean designs rendered in embroidery.

The earliest printed fabrics that we can be sure were made in England appeared in 1619. It is probable that they were all of linen and not cotton, for they had been making fine quality linen for such a long time that it seemed easier for them to print on that than on the uncertain texture of the cotton. That this was a subject for discussion was made note of by our worthy diarist Samuel Pepys, who recorded that there had one day been a quarrel as to just what those calicos were and as to whether or not they were linen. But he added that of course they were really made of "cotton wool" which grew on trees and not at all like hemp. It was undoubtedly the cloths from the east which had been under discussion and not the native products.

In 1663 Pepys reported that he had bought for his wife

"a painted East India callico for to line her new study." Evelyn, who has given us so many charming glimpses of seventeenth century England, saw a room in Lady Mordaunt's house that was

hung with Pintado, full of figures, great and small, prettily representing sundry trades and occupations of the Indians, with their habits.

Obviously those were imported and not of domestic manufacture. One record shows that in 1684 there was an order for four thousand "palamposts" (palampores) which proved to what an extent they were sought in England. By that time it was also possible to order pieces made in India of specific sizes and in selected colorings. Small all-over patterns were in demand, too, and it was at the end of that century that Indian chintzes were at their peak.

But the English continued to struggle with the manufacture of those prints themselves, and in 1676 a William Sherwin received from the crown

a grant for fourteen years of the invention of a new and speedy way for printing broad cloth, which being the only true way of East India printing and stayneing sich kind of goods.

Several "Print grounds" were established along the Thames, below London, though we know very little of the progress they made. The art of reserve printing they also picked up from the east, and their blue and white prints were comparable to the more famous ones made in Switzerland and later in Rouen. The first really important print-works seems to have been started at Richmond by French refugees about 1690. Once again the Revocation of the Edict of Nantes had been of incalculable advantage to the textile industries of England.

But all this came to an abrupt end, for the silk and linen

trades protested as had the wool manufacturers. In 1700 Parliament prohibited the further importation of all calicos from India, China or Persia, and later declared that they could not be worn or otherwise used in England. Evidently the native products were not considered to be of very great importance for nothing was said about them. Like most all such prohibitions that was a great stimulus to the trade. The palampores became even more valuable because they were smuggled in and chintzes for gowns had never been in greater demand.

Queen Mary had a bed draped in chintz for one of her rooms at Hampton Court and that was excuse enough for many of the great country houses to follow suit. The "Atlass bed" became quite the rage, especially after the use of chintz was forbidden by law. Daniel Defoe tells of "Atlasses, Mass-lapatan, chintes, and fine painted callicoës." In 1708 he gave this version of the existing state of affairs.

The chints was advanced from lying upon their floors to their backs, from foot-cloth to petticoat . . . it crept into our houses, our closets, and bedchambers; curtains, cushions, chairs and at last beds themselves were nothing but calicoës or Indian stuffs; and in short almost everything that used to be made of wool or silk, relating either to the dress of women or the furniture of our houses was supplied by the Indian trade.

Another account from a commercial viewpoint was as follows:

The calicoës are sent from the Indies by land into Turkey, by land and inland seas into Moscow, and Tartary, and about by long sea into Europe and America, till in general they are become a grievance.

In 1714 it was reported that the fashion included

Calico Shirts, Neck Cloths, Cuffs, Pocket Handkerchiefs for the Men, Head Dresses, Night, Hood Sleeves, Aprons, Gowns, Petticoats and what not for the Women.

Then came a stronger prohibition that was followed up by the police. Ladies were arrested and fined as much as five pounds for wearing chintz gowns, for the new decree included the wearing as well as the using and making of those forbidden fruits.

There were one or two futile attempts to start up calico printing works, but there were too many taxes as well as too strong prohibitory laws. A change of heart was finally apparent in 1736 when a cotton weft was allowed if combined with a linen warp. That was the opening wedge and inside of two years cotton manufacturing was definitely launched in England. Though the prohibition was not removed until 1744 it had become a forgotten thing for several years before that. About 1740 Manchester acquired its first large plant and from that day on that region has been the center of England's great cotton industry. The climatic conditions there which have always made it so unpleasant for living or for agricultural or other outdoor industries are ideal for handling linen or cotton. The dampness is just what they need, so most of the farmers turned to spinning and weaving as more pleasant and more lucrative.

In the newly established factories England tried to approximate the fineness of the imported prints, and followed as closely as possible the patterns from India that had been so popular. They kept working at the secret processes known only to the Indians, but though English prints advanced steadily they could not equal those of India. The imported ones had improved with age as the cotton became more pliable and soft as silk, and the colors more subtle in their harmonies. Unfortunately the English ones did not launder so very well and faded and dulled instead of growing more mellow. It had been the clean and brilliant quality of both pattern and color that had appealed so strongly to the English taste.

Prior to 1774 when the embargo was completely lifted

both wool and linen were cheaper than cotton due to the taxes. Consequently hand-blocked linens came into popularity, not only because the linen was free from taxation, but because their texture and designs seemed to take the place of the all-over embroideries which had quite gone out of fashion. Some of the patterns that had been created for embroidery were even transferred to the wooden blocks with which the linens were printed.

The workers had learned to handle wood-blocks and copper-plates with equal facility. The latter prints were mostly of one color only, following the fashion of the *toiles de Jouy* (see Chapter XX) while there was no limit to the colors used in printing with the wood-blocks. One difference in the two mediums lay in their preparation. Wood-blocks were cut in relief so that the pattern stood out from the background while just the opposite was true with the copper-plates where the designs were always in *intaglio*.

France continued to be the source from which the styles were derived, even to the extent that there was a reflection of the elaboration of the Regence early in the eighteenth century. Chinoiserie was the next favorite, and as in France, it was never true Chinese, but as they liked to think China might be. That phase lasted through the greater part of the eighteenth century until the revived interest in classicism tamed down its wandering vagaries. France, too, had provided most of the names for the cloths, *toiles peintes*, *indiennes*, and *perses* or *toiles de perse* which were the ones with gay little flowers scattered over a dark ground. The far-reaching influence of Persian design has lasted, you see, from prehistoric times down to our own day. Some of the English prints were also pictorial, some had small landscapes, and some showed the coming trend of classicism. It was not until after the middle of the century, when trade with the east was almost at a standstill, that any real originality began to creep in. Then the boldness of the

Indian designs gave way to the finer floral patterns which covered more of the ground, perhaps more in the Persian manner, though quite English in character.

The ladies who had created this vogue for gaily printed stuffs took great interest in selecting them. They became connoisseurs in patterns and texture and knew the fast quality of the more brilliant colors. Where they were used in the great country houses they were frequently lined with a kind of wool cloth known as moreen. All the people of wealth, of the court or not, were so delighted with those bright chintzes that they bedecked everything from bedrooms to work-rooms. But even so they belonged to the luxury class and it was not until the nineteenth century mills of Manchester turned them out by the mile that the poorer people could have them, too.

After the last ban against them was removed there was another spurt, this time in the mechanics of the industry. Arkwright took out most of his patents for spinning during this period, those inventions which did so much to make the work simpler and easier. Cylinder-printing came into existence, its invention credited to a Scotsman named Bell, who had introduced it into some mills in Lancashire somewhere between 1770 and 1780. At first one small cylinder printed only the outline and the colors were later filled in. As that proved most expeditious the next idea was to print in the pattern with different rollers for different colors. By using five cylinders Bell finally achieved, and patented in 1785, the famous five-color process. But as these cylinders were very small the size of the repeat of the patterns was strictly limited—eight to twelve inches being the largest.

Chintz works began to spring up along the Thames, but they did not stay there long. They moved up to the central part of England nearer the source of fuel. That had become a necessity after the invention of the spinning-jenny and the cylinder-printing, both of which required mechanical

power. Also there was more room for bleaching, and despite many chemical methods attempted they found nothing so satisfactory as the old-fashioned way of letting Nature do the work. But where quantities of cloth must be stretched out to receive the benefices of Nature lots of space was needed. Eventually, as the sun was often fitful up in that section, they devised the scheme of sending linen, and sometimes cotton, over to Holland in the spring to be bleached and returned in the fall for manufacture.

Late in the eighteenth century there was a revived interest in classicism which was felt particularly in architecture, interior design and the fine silks then being woven. The discoveries at Herculaneum and Pompeii were directly responsible for this though there were other forces back of its development. A few of the fine classical motifs appeared in the chintz designs though the only outstanding development of that period was the use of "piqué" work or "pinning" which referred to small dots of color which sometimes covered the whole background and sometimes were used only as a filler for a flower or leaf form. The dots were made by many small brass pins forced into a wooden block of whatever shape or form was required. Those same dots were also used as boundary lines for the "pencillers" who then filled in with blobs of blue. Fine lines could be made in much the same way, using thin sheets of metal pressed into the wood block at right angles instead of the brass pins. Those same strips of metal were sometimes used for outlines of designs. The form thus made was then filled in with felt and in the printing it made a solid patch of color suitable for a bold pattern. Further explanations of printing can be found in Chapter XXV.

Indian patterns were quite out of style by the end of the eighteenth century and England was producing designs, colors and textures that were more truly her own than ever before. It is also worthy of note that the patterns were all

made especially for prints and were not copied from woven silks. The large central floral design with a connecting stem running diagonally or vertically was of course the last vestige of the Indian motifs. The prints made in the Persian manner were rich and handsome and usually had a buff background instead of a darker one. This was obviously intended to harmonize with the dainty satinwood furniture then in vogue. There were also special patterns made to match the designs on the painted furniture. Strong color contrasts were particularly noticeable in comparison to the continental ones which were so often of one tone only. Some of the prints are quite as difficult to identify as are the damasks and brocades for the artists of one country "cribbed" the designs of another as soon as they appeared. There were, for instance, the porcelain patterns which may have come direct from the porcelains themselves, or they may have been copied from the prints made in Alsace.

Floral chintzes are undoubtedly England's forte and most of the late patterns are amazingly delicate and charming. Small panels especially designed for the seat or back of a chair were excellently planned. Some of them were meant for later application to plain materials to which they were at times even joined with embroidery. The designs were frequently so well drawn that the same rollers could be used for wallpaper and chintz. In that way walls, draperies, furniture and costume might all have the same pattern. The colors were a vast improvement on those of the early days and were especially pleasing with the furniture of that era. Perhaps that is why in so many charming Georgian interiors of today we get the feeling that the mellow chintzes seem to belong with the fine antique furniture.

Manchester is still the center of England's cotton industry and now exports quantities of materials to the East. India is the greatest market—it is astounding to realize that



PLATE 31. One of Philippe de la Salle's famous designs made for Catherine II of Russia in 1771. It proves the intricacy of Camille Pernon's weaving with both chenille and silk brocaded against the pale yellow satin background.

Courtesy Musée Historique des Tissus, Lyon.



PLATE 32. An English cotton print commemorative of the marriage of Princess Charlotte of Wales and Prince Leopold of Saxe-Coburg in 1816. In predominant colors of red and green on white the insignia of the Prince of Wales are readily identifiable.

Courtesy Victoria and Albert Museum, London.

today England sends back printed stuffs to that great source which started the industry revolving. The cotton fibre still comes from India, and the cloth that goes back to them is printed in what the English used to call the "Oriental fashion." The colors on those cheap prints, however, are not always so permanent as they should be for those lands of eternal sunshine. Special prints are made for the Mohammedan trade, without animate forms if possible, and others of selected designs and colors for other countries of the Orient. Many a gay print that you will find in Bali or Sumatra or Siam or Zanzibar is not a native product at all, but has just come from the mills of Manchester.

Practically all the textile machinery in use today was invented late in the eighteenth century or in the beginning of the nineteenth. The handling of the cotton from the field to the final glaze of a smart chintz is a fascinating story but one that involves a good many technicalities. Spinning-jennies and power-looms belong in the realm of science and not here in this simple book on the history of designs in textiles. While the Jouy works were at their height they sent an ambassador over to England with their newly discovered green dye. He traded successfully in both Paisley and Manchester and thereafter all English cottons were printed with green dye instead of the old yellow over blue.

England's chintzes cannot be left without reference to that great nineteenth century artist, William Morris, 1834-1896. He is the outstanding figure of the last century and gave a new stimulus to all English design. Credited with being a poet, he was artist and designer as well. As a boy he made nets, then he designed embroidery, started a revival of tapestry weaving, and was the genius of modern printed stuffs. In his print-works he used wooden blocks and old-fashioned dyes that were far more permanent than the chemical dyes used in the more rapid and cheaper productions.

He supervised all his printing work himself as he did his tapestries, though he had many outside artists employed in interpreting his ideas.

He was a genius who can be credited with being the forerunner of modern design. He deplored the baroque era and in the effort to get away from it made a serious study of Gothic ornament. But nature was his main source of inspiration, and there are some who find his only weakness in reproducing nature too exactly, and with no allowance for the vagaries of printing on a woven texture. He found the eighteenth century Persian things delightful, though not of a scale that appealed to him. But it is perhaps from the Persians that he learned one of his dominating ideas—that only artists should be allowed to design textiles. He also put the craftsmen on a higher plane, and felt that even if he employed a machine to aid his hands that should not lessen the artistry of his work.

Toile de Jouy

ONE of the most exciting stories in the whole history of fabrics is the development of the lovely printed cottons which we now label *toiles de Jouy*. They are so colorful and at the same time so full of interest that we find many uses for them. The original ones were printed in one color only, usually blue or red on a cream or white background. The pattern was always pictorial, amusing figures or landscapes, allegorical subjects or later on those commemorating some historical event. La Fontaine's fables provided fashionable subjects, too. The cotton on which they were printed was as fine as that of the better muslins and prints that were being brought into France from India during the same era. Only occasionally was linen used. Today we copy those old eighteenth century French prints, we make new ones in the same spirit and yet another group printed with many colors carries the same name just because of the grouping of the figures or the miniature landscapes in the design.

The story of their creation is quite as colorful as the toiles themselves. In southern Germany there lived in Württemberg, in the early eighteenth century, a family of dyers named Oberkampf. They owned a large dye-works where only the best and fastest dyes were made. The son of the family was sent abroad to study foreign methods, as the gay and colorful *indiennes*, as the French called the cotton prints from India, were sweeping all other fabrics aside in popularity. This son discovered that the Swiss were endeavoring

to copy them, following the same laborious methods used in India, but without their cheap labor. The French were making copies, too, but not such good ones, as their workmanship was careless and their dyes fugitive.

This young man's chief enthusiasm was for an entirely new method of printing that was rising into popularity called "reserve dyeing." The cloth thus printed had a clear-cut pattern of white against a blue or other color background. That they were harking back to the days of the glorious Egyptians they may not have realized, for though they were closer to it, they knew far less about the modes of work in the pre-Christian era than we do today. Young Oberkampf returned home full of zeal to set about some experiments of his own. In due time he evolved just the reverse of that fashionable cloth which had so inspired him. That is, he was able to print a pattern in blue on a white ground. He is generally credited with being the first to print fabrics in this way.

In the meantime he had married and settled down in Ansbach where a son was born in June 1738 whom he christened Christophe Philippe. It is this son who was destined to revolutionize the decorating of cotton in France. He saw textile printing struggle from its infancy to a magnificent climax as one of the leading industries of France. Oberkampf *pere's* important discovery was widely commented upon and lead to his appointment to a prominent position in the chintz works at Bâle in Switzerland. There the young son, Christophe Philippe, was apprenticed in 1749 when he was but eleven years of age. Young as that seems to us it was not considered so in those days, for boys of that age knew full well what trade or profession they wanted to follow.

Some three years later the senior Oberkampf set up his own print-works and his young son worked with him for a time. Then he determined to travel as his father had, so that he, too, might learn more of the methods employed by

other people. After his return he willingly helped for a short time in perfecting the new and amazing process which his father had discovered. But in 1758, again determined to make his way alone, he set out for Paris. Despite the fact that he knew no French he was positive that he could get a job there and work his way up. He secured a place as colorist in the works of a M. Cottin where they were making copies, and not such very good ones at that, of the popular *indiennes*.

To understand the great demand for these gay prints we must retrace our steps a little. The fine decorated cottons imported from India had become so extremely popular in the late seventeenth century that Louis XIV's minister of finance, Le Peletier, was forced by the impoverished wool merchants to take some step to try to save the wool and silk market. Consequently a royal edict of 1687 forbade the importation of any more colorful prints and some time later even the sale of domestic copies was prohibited and all the blocks were ordered destroyed. From the time of that ban until well into the eighteenth century many are the stories told of guards stopping people who wore costumes of printed cotton, of seizures in private houses, and of the quantities of those lovely fabrics that were burned. Despite this ban on *indiennes*, or perhaps because of it, Madame de Pompadour, the court favorite, chose that time to furnish an entire room with these bright prints.

India had for years been producing fine cottons with the brilliantly colored patterns which are so decorative. It is probable that the Portuguese were the first in Europe to copy those textile prints, though other authorities cling to the idea that Holland was first, the methods and samples having been brought out of India by the Dutch East India Company. Germany with Augsburg as the center came soon after, and it is believed that the first blocks were made in the Rhenish monasteries where the earliest examples of book-

making were also found. Those ancient German prints were most of them made with brown or black ink stamped on a natural linen background. The subjects were religious as they were used chiefly for altar hangings. Ultimately various factories were established by the French and it was in one of them that young Oberkampf got his start. Instead of trying to follow the Indian methods as the Swiss did, the French were using only fugitive dyes, that is dyes which were not safeguarded against laundering. As in those days good chintzes were very expensive they were worthy of being handed down to the next generation as prized possessions. That explains one reason that the new French *indiennes* were not successful. Their beauty was as fugitive as their dyes.

By the end of the seventeenth century everyone who claimed to be at all in the mode was using printed cottons—for walls, curtains, draping beds and dressing-tables. The same patterns could be made up for dresses and dressing-gowns. You will recall that in “Le Bourgeois Gentilhomme” Molière makes merry with the fact that if M. Jourdain is to appear to be a person of quality he must have a dressing-gown of India print (*robe de chambre d’indienne*). This fad increased throughout the eighteenth century despite the ban against their importation from India. As prohibiting a charming thing has never been an effective way of stopping its appearance, the smuggling in of *indiennes* became a fashionable pastime. The edicts against them counting for so little they were finally reversed and chintzes swung to an ever higher degree of favor. This lasted well into the nineteenth century despite the political upheavals in France.

The prohibition against French calicos or decorated cottons was removed in 1759 which seemed an auspicious moment for Oberkampf to set up shop for himself. He hunted about the environs of Paris and finally settled in the village

of Jouy-en-Josas which is on the banks of the Bièvre, close to Versailles. The water of this river was supposed to possess some qualities that made it doubly desirable to use for dyeing and printing. There he bought a tiny little house or shop where he planned and worked and ate and slept.

The first print was turned out in the spring of 1760. Oberkampf was the designer, the engraver, the printer, the dyer. He had done it all in the tiny shop which was not large enough for the essential copper vat, and where he slept on the work-table because there was no room, and possibly no money, and certainly according to his viewpoint no need, for a bed. This ambitious young man built his own printing-tables, he made his own designs and gouged out the patterns from the hardwood blocks. He mixed his own dyes, for after all that was his greatest inheritance, and lastly he printed the fabric. Then even with the pattern complete there was the finishing and the marketing to be done. But no task which led to the completion of this print was too much for him to undertake.

A man named Tavannes who backed him that first year soon discovered that the young Bavarian was a fine investment. This new type of decorative cotton caught the public fancy at once and by another three years Oberkampf had enlarged the works and taken in two partners. He had a definite goal ahead of him and he worked tirelessly toward that end. His ideas were never radical and all of his efforts were bent toward constant improvement.

Without doubt one of the greatest reasons for Oberkampf's phenomenal success was the fact that he was always on the job. Even in the later days of his great prosperity he watched his workmen come and go, and he knew the kind of work they were turning out for him, as well as their personal sorrows and happinesses. At the height of his career when his plant was working at top speed he even provided houses for his employes. The works was well-organized and

he was extremely modern in his establishment of a hospital and his belief in old-age pensions for his workmen. At the same time it was he who rang the bell in the morning which started the hands to work, and it was he who gave the same signal at night. After the workmen had gone the master made the rounds to see just how far each department had progressed during that day.

The earliest toiles were printed on a cloth of linen and cotton combined which, though bought in Normandy, was called *siamoises*. That name was taken from a striped or checked fabric of silk and cotton which was first introduced into France at the Siamese Embassy in the court of Louis XIV. Oberkampf also used some of the fine Indian cotton like that of the true *indiennes*.

The first patterns were small and somewhat imitative of the imported prints. Those that are dated 1763 had squares or checks or very small floral patterns and occasionally a pictorial background. As most of them were printed in brick-red on a cream ground they earned the name *toiles d'orange de Jouy*. Many dainty patterns in the Chinoiserie manner followed, for it was at that time that the Chinese element in brocades and damasks was so dominating. Some had the flowing curves and full dignity of the silk fabrics of the Louis XV style while others were amusing with quaint figures of Chinamen perched in trees, or of monkeys enjoying the same pleasures as human beings. Later came the introduction of French landscapes and pastoral scenes, which gave the toiles an entirely new feeling.

It was apparently in the year 1767 that Oberkampf first used the famous imprint on both ends of the cloth which bore the name of the factory and the words *Bon Teint*. It was upon that guarantee as to good dye, which meant in those days fast color, that his later success was built. He never compromised and he never used any inferior or less expensive dyes if there were better ones to give better results.

The method of printing which he had followed from the beginning consisted of (1) the printing of the outline in black, (2) the filling in with two, three or four blocks the full detail of that pattern, and (3) the painting, or applying by hand, of the small details of color which were so difficult to print properly. Women were largely employed for this task as they were more skilled and more exact. Indigo blue was always the most difficult color to handle. In 1768 a new type of printing was tried out which was called "picotage." This consisted of many small dots either filling in the spaces or making the whole pattern. The monochrome prints were still the most popular, the favorite being the rose-red that they called *campaïeux rouge*, though the blue was a close second and the puce or mauve of less appeal to the color-loving French people.

Oberkampf's brother joined him in this prospering but hard-working enterprise and made one contribution of note. It was he who introduced copper-plate printing in 1770. Away with the old hand-blocks—all their energy was centered on this new method of printing. That only one color at a time could be used with these new plates made no difference, for the Jouy prints were all monotonous. Some of the plates that they worked with are still in existence and can still be used, though the sharply defined lines which were so distinctive of Oberkampf's work have been dulled by their repeated use. Those copper plates were so exact, so perfect in drawing, that it was not necessary to use pitch-pins to register where the next plate was to be set down.

Jouy must have been as gay and colorful in those days as a garden of spring flowers, for long pieces were stretched out on the meadows for setting the colors as well as for bleaching. As the French understood bleaching quite as well as the Dutch and Germans that was part of the regular routine at Jouy. After the bleaches were used the linen or cotton was spread out on the grass. According to one historian

the factory itself was at times quite as bright as the fields. The plant had grown considerably in size and one wing was devoted to a sheltered drying-room, but when the weather permitted, and no doubt they made the most of it, the materials were hung outside on racks and floated the entire length of the façade, colorful as a patch-work quilt. Remember that these gay prints were being made for the same people of the Louis XV court who loved the gorgeous damasks and brocades already described.

Oberkampf having spent the required ten years in the country became a naturalized French subject in 1770 and four years later he married. Apparently his home life was always secondary, for there is very little information about it. That same year he introduced something new in his designs—scattered bunches of flowers, printed regularly and with symmetrical precision but leaving much white space between. This new pattern was created for a special importation of pure white cotton cloth which he had had especially prepared in Switzerland, though he imported most of his cotton direct from India.

The next great event was in the spring of 1783 when King Louis XVI visited the works. He made several selections of patterns and new designs were subsequently created for the queen. The king was lavish in his praise of the works and the materials, and later sent to Oberkampf letters patent which allowed him to add the title *manufacture royal* after the name of the firm. A design made to commemorate this royal visit to Jouy pictures the detailed technical process of making the prints. Seven different scenes show with great accuracy and clear definition the work being done. This was a copper-plate print. Oberkampf was ennobled in 1787 but like most of his personal history it seems to have made little difference in his life. In 1792 with the coming of the Revolution the royal grant was removed from the signature which

then continued to vary with the political and governmental turmoil of the next few years.

The metal rollers for printing which were first introduced at Jouy in 1793 made a considerable fortune for Oberkampf up to 1808. They were modelled after those already in use in England. There is a good bit of controversy as to the invention of engraved cylinders for printing, but a Scotsman named Bell is usually accredited with having introduced this very modern mechanical device about 1770. Those metal cylinders changed the style of the patterns in Jouy and a minute network of lines filled the background, over which were placed wreaths, palmettes, oval and circular medallions and the formal leaves of classical origin.

By this time, of course, Oberkampf was not doing all of his own designing and another name appears which is almost as closely connected with the development of toiles as that of Oberkampf himself. That man is Jean Baptiste Huet, born in 1745, the most gifted and prolific of designers. One of his most famous designs was the one described above which depicted the entire process of manufacture as it went forward at the Jouy works. That is in what is called the early Huet style, one that is especially familiar to us today as that particular print has been copied so frequently and served as an inspiration to countless modern toiles. His work was always full of grace and animation. At the same time there was usually an amusing quality which brings a smile to the lips. Quaint *genre* subjects served him for other prints and the fables of La Fontaine printed in red on white or blue on white were favorites at court.

Huet had the ability to draw in great detail without making the picture too full. He could include any number of animals or persons in one small group without the effect of crowding. The scale of his drawing was accurate though always small, for his art lay in reproducing in diminutive

size scenes that might otherwise have been too grand for a decorative fabric. Perhaps one of his greatest charms lies in the fact that his prints always seem to suggest that he had a thoroughly good time designing them.

At the same time that Huet was planning his charming pastoral scenes, a different type of work was also being printed. Designs suited to larger pieces of furniture were drawn up and broad bands with interlacing ribbons and bits of foliage not unrelated to the contemporary brocades made their appearance. Those new patterns for the flower-loving court of Louis XVI were printed on blue, rose and yellow grounds. It was at this time that Oberkampf began to specialize in patterned backgrounds. They were in direct contrast to that other phase of his work with the clear white space between scattered scenes. Stripes were popular in court circles, so much so that one wit of the day decided they all looked like zebras when gathered together in court attire. This naturally led to stripes being used for printed cottons as well. Baskets of flowers, ribbons, trophies, and the myriad details of this period which were designed for wall carvings or fine damasks and brocades soon found their way into the fashionable toiles.

Huet developed still another type of design to correspond with the new fashions. Instead of detached scenes with miniature Dresden ladies among naturalistic foliage, he placed symmetrical figures in frames with arabesques, reminiscent of the foliated scrolls of Louis XV decoration. Still later he gave up all those graceful subjects and abandoned the plain grounds for carefully designed backgrounds which he worked out in architectural style. Important figures in Greek or Roman costumes were enclosed in squares, circles and other geometric outlines. This phase followed the Revolution and was due to the revival of heavy classical things which appeared directly afterwards. His facility is shown in the readiness with which he turned from his delightfully

naturalistic scenes to the formal treatment of gods and goddesses of ancient Greece and Rome and to their symbols.

During the last years of the eighteenth century Oberkampf visited London every year to see what was appealing to the popular taste over there. He studied trends then as carefully as our merchandising experts study them today. Fashions in London were well worth consideration, too, for those prints of his went into costumes just as often as into draperies. Unfortunately very few of the original toiles used for costumes have been preserved, but their fashionable quality increased the business at Jouy extensively and Oberkampf owed a large part of his success and his fortune to this whim of the ladies. As fashions for houses changed less often there are more samples of that class preserved for our study and admiration.

By 1790 he had over fifteen hundred employes and his prints were much discussed in both France and England. His sales were tremendous and his profits corresponded. Sensing that all was not well and that the royal throne was tottering he prepared for a change. He bought up quantities of white goods and enlarged his works with new buildings and new facilities. The Revolution therefore did not catch him unaware, and it was but the discretion of a good business man to turn from the dethroned king to the ruling emperor. He followed the tide of the Revolution and made prints depicting some of the greatest historical events. Occasionally designs had to be altered rather rapidly, but that was of little importance compared to keeping his place as the leading manufacturer of printed and decorated cottons in Europe.

During the years following the Revolution trade was rather quiet, but by 1805 prosperity reigned again and his prints were more popular than ever. The designs, however, had undergone a change, and not for the better. Aside from those done in the old style, they were confused and crowded.

Flowers and leaves almost obscured figures until lozenges and medallions finally gained supremacy. The severity and formality of the Napoleonic style were reflected as much in his printed fabrics as in the fine satins and brocades of the same period.

In the early days of the First Empire Oberkampf discovered that everyone was interested in the technique of dyeing and printing. Chemistry had become a pastime and classes were organized for the instruction of young and brilliant women. Several of the old *toiles* pictured various chemical processes and one may be interpreted as a class listening eagerly to the learned discussion of phenomena by the master. It is recorded that there were classes in chemistry even at the Jouy works, as no doubt that was considered an excellent way to build up business and appreciation for their product.

In June, 1806, quite unannounced but accompanied by a large suite, the emperor appeared at Jouy. There was a great flurry as he and the Empress Josephine were shown through the factory. Oberkampf received high praise for his diligence, his prints—and several suggestions of Napoleon's as to designs were later carried out with great expedition. When leaving the plant the emperor appeared to notice for the first time that Oberkampf was not wearing the Cross of the Legion of Honor. Expressing his surprise and regret he took off his own and presented it to this master of his craft. That was undoubtedly the high point of his whole career and it is evidently one of the few personal things which really touched him. One of Napoleon's requests, or perhaps commands is a better word, was that this visit and the scene of the decoration be recorded on a print as a companion piece to one that had been made at Rouen after a design of Isabey's.

When Oberkampf exhibited at the Paris Exhibition in the

following year he received the gold medal. This added a bit to his already great popularity and the plant was busy night and day. The print which won this high acclaim, designed by Huet and printed in violet on a cream ground, was called "Le Meunier, son fils et l'âne." It told in a series of scattered and decorative scenes the familiar story of the miller and his son and the ass. Three years later Oberkampf received Le Grand Prix for valuable services rendered to science and art. Those public acknowledgments of his unstinted efforts for progress in those two fields were dear to his heart.

One of his greatest contributions to the science of printing and dyeing was his discovery of a green dye. Up to 1809 green had always been made by printing yellow over blue. He is credited with being the first to use a solid green, and on April 20, 1810, he was awarded a prize by the Institute of France for this achievement. Any fabric printed with a pure green dye was done after that date.

One of his men took this new green dye to England and by clever bartering came home with some valuable constructive additions for the print-works. He had learned in Manchester the three-color process, and he also saw for the first time a cotton spinning machine. It was from this rather fleeting glimpse of it that drawings were constructed and from those plans the first French machine was made in 1812. Up to that time all the cotton had been imported as cloth ready for printing.

In 1810 the Jouy works were again visited by the emperor, this time with the new empress, Marie Louise. She, too, like Josephine found much to please her and again the works of M. Oberkampf were brought to public notice by the praise of the emperor. But soon after that things began to go less well and the end of the story is soon told. This despite the fact that the cotton business was steadily increas-

ing in the nineteenth century due to industrial freedom. Or perhaps because of that—the industry was becoming centralized and small factories were crowded out by a few large ones which could produce all the cloth needed by the whole nation.

Huet, the favorite designer, died in 1811 and was succeeded by several of his associates. Most of the prints he worked on were signed by him, and fortunately small bits of many of his best designs have been saved. Some of his original drawings have also been preserved in the Musée des Arts Decoratifs in Paris where they serve today as inspirations to the modern students of design. Of the artists who carried on Hippolyte Lebas, Pierre Prud'hon and Horace Vernet are the three outstanding names. Lebas was not quite so free in his drawing and less sure of the scale of his patterns. He had the habit of enclosing designs in medallions or other geometric forms. It gave him more leeway as to scale. Vernet did *La Chasse* which has been so much reproduced and copied. As an authentic picture of the mode of hunting and life at Versailles in 1815 it is particularly valuable.

Disaster came upon this little town of Jouy and its famous factory with the march of the Prussians in 1815. They stormed the town, almost wrecked the works, and stole many valuable things. Oberkampf alone remained in his factory, but as it was his very life he stayed there as long as he could. Broken in health and spirit this famous printer and dyer died soon after, October 14, 1815.

After the destruction of most of the plant some of the family tried to carry on, but not only were they handicapped physically, the soul of the works was gone. It does seem to be an example of what one man with an indomitable will and a soul-stirring ideal could accomplish. They gave up in 1820 and it was not long after that that the factory was

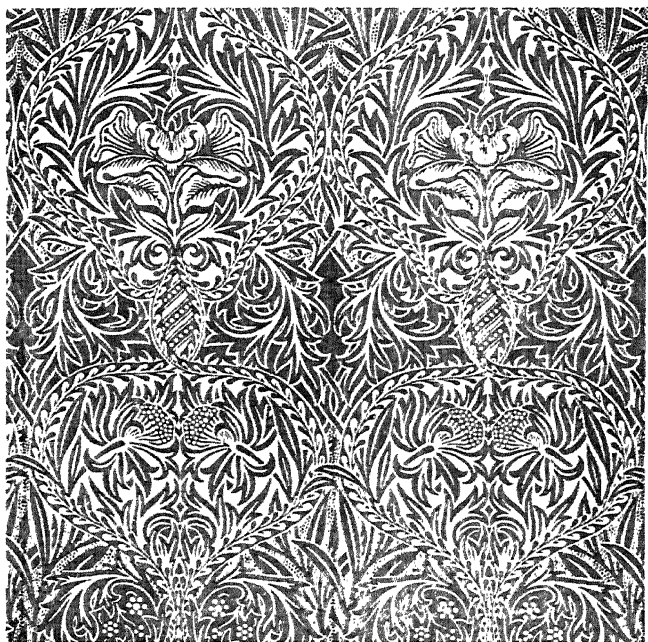


PLATE 33. One of the characteristic designs of William Morris.

Courtesy Victoria and Albert Museum, London.

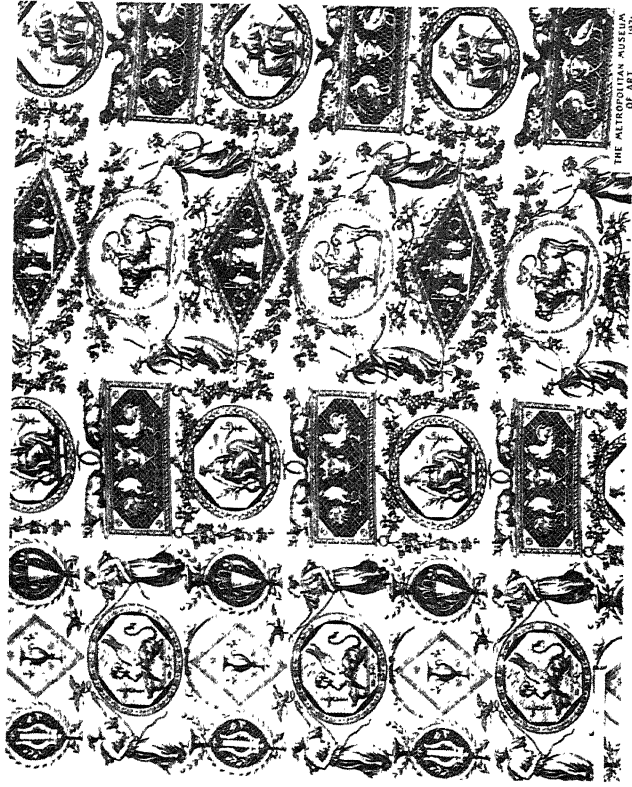


THE METROPOLITAN MUSEUM OF ART

PLATE 34. *Left.* One of the first toiles made at Jouy by Oberkampf, 1770. *Le Petit Baccus* with picotage background is printed in red on white.

Right. A classical toile de Jouy designed by Huet in 1805. The medallions were printed in mulberry on white by the copperplate process.

Courtesy Metropolitan Museum of Art, N.Y.



THE METROPOLITAN MUSEUM OF ART

torn down and the town sank back again to its quiet rural atmosphere after its blaze of flowering color and fame for almost a hundred years. Today all that is left of the glory that was Jouy is the original little house which was the cradle of the great industry.

Fabrics of the Georgian Era

TO BE strictly technical one should not include the fabrics of Queen Anne's day under this heading, but as she represents the very beginning of the eighteenth century which is always identified as Georgian, perhaps these few notes fit here better than elsewhere. As a matter of fact the furniture known as Queen Anne is vastly more important than the fabrics used with it. The artists of that period were just escaping from the Dutch influence and in their efforts to create something simple in contrast to the sometimes ornate furniture of the Jacobean century they spent all their time on form and very little on ornament. And the forms they evolved were so delightful with their graceful curves that they really did not need to rely on added ornamentation.

The fabrics of that age were not of particular interest for they were practically all French or Italian. Velvets of soft color made excellent upholstery for the new deep-seated overstuffed chairs, especially when an elaborate fringe of the same tone outlined the contours. Damasks and brocades were very much in fashion, particularly for the settees and chairs which were French in character. *Petit point* was made by the English ladies with as great facility as could be found in France, and it was the correct covering for a *fauteuil* or a stool or fire-screen. The English needlework that had been the leader of fashion in the preceding century gradually dropped back, though not out. Combining of stitches to make a more elaborate effect was the mode of the moment and

the newer embroideries were made to look as much like brocades as possible.

The furniture had changed so definitely in style that it was quite essential to have a suite in the new mode if one belonged to that class who considered fashion. And new furniture meant new fabrics, so though a large amount of silks was handled they were all the old friends with which we are already familiar. The settees or love-seats with rolled over arms and rather high backs and one easy chair to match were the required pieces if you would be in vogue. A high-backed wing chair, too, had come into great popularity on which the Italian velvets and brocatelles fitted admirably. Beds were still curtained and an elaborate canopy topped the four posts. Curtains of silk or printed chintz hung at all the windows and even the poorer people who could not afford new furniture were sure to have gay curtains.

Chinese furniture and rare *objets d'art* from the Orient were quite harmonious with this new style, so the Chinoiserie patterns were right in line. Both Watteau and later Pillement were copied, though the exotic little Chinese figures were this time given a background of English trees and flowers. The new fabrics made definitely for this period had either the Chinese motifs or the cockle-shell similar to that which was often the sole ornamentation on a piece of furniture. The Indian designs were passé except in chintzes, and even there the larger floral patterns were more appealing to the popular taste.

During the early Georgian era walls were covered with fabrics, though later in the century wallpaper was the vogue. Hangings of rich stuff decorated doors and windows and the elaborate valances were heavy with fringe and tassels. Italian flowered velvets with vari-colored patterns were still used on the walls and on heavy furniture that had carried over from the previous period. One early Georgian drawing-room had wall panels of cut and uncut velvet and heavy

satin curtains at the windows with bands of trimming that were quite as decorative and colorful as the velvet. In the small salon next to it the walls of green and gold satin were a decided contrast to the gaily flowered chintzes on the chairs and settees. The printed cottons were of comparative value and so were frequently combined with the silk fabrics. The rooms could not but be conglomerate, but they were charming and livable none the less. The symmetrical Renaissance patterns seemed ideally suited to the delightful architectural interiors, and on the other hand the rococo style of France was the logical note to follow for the furniture with the subtly curved lines.

There were three Georges in the eighteenth century, I, II, and III, and with the advent of each one came further changes in decorative styles. Gardens occupied much time and attention and hence the deluge of floral patterns. Landscapes, either formal or quaintly rural, were next in popularity to flowers. Chinoiserie was still good and with Chipendale's taking it up so strongly the number and variety of Chinese motifs increased. Architecture was of vital importance and hence architectural motifs were approved. If ever there was an age of variously patterned fabrics, it was this one. Chintzes and linens were very popular and the damasks and brocades and brocatelles from France were in great demand. With so much stress laid on interior architecture it was essential to consider the fabrics that best set off the delicate panels, the fine fire-places, and the splendidly conceived moldings. Damasks were most often selected for they reflected a certain amount of light and might at the same time carry harmonious patterns. A well-drawn vase filled with graceful flowers or a conservative use of architectural details in the proper colors reflected the elegance and formality created by the background.

When Sir Thomas Robinson described his visit to Hough-

ton Hall he provided us with a good idea of a fine English house in the year 1731. This house had been built for Sir Robert Walpole in 1722, so its decoration was really of that age. He said that it was quite the best of its size and

is a pattern of all great houses. The vast quantities of mahogany, furniture by Mr. William Kent, carved and finely gilt; walls hung with Genoa velvets and damask, and so plentiful that this one article is the price of a good house, for in the saloon they are to the value of £3000.

William Kent belongs properly to the middle of the century and Horace Walpole considered him to be a "better gardener than artist." The furniture he designed was very heavy and ornate with gilt decoration. Consequently silk damasks and unwieldy velvets were more in keeping for its upholstery. The former textiles were very often of English manufacture instead of being imported and came from Spitalfields. Bold floral patterns that were symmetrically centered were most frequently selected. The feeling for refinement had not yet begun and people, manners and taste still inclined to be coarse and rough.

Chippendale, the great cabinet-maker of the mid-eighteenth century and the most famous of the Georgian designers, was of decided importance to fabrics, because of his great variety of styles all combined within one. His earliest work was developed from Queen Anne, but with much greater elaboration. With the furniture of that phase he used the same type of silks and damasks and patterned wools that had been in vogue earlier in the century. He also made use of the tooled leather from Spain and the fine needlework that looked almost brocaded. The satyr's mask, the cabochon and various architectural details copied from the interiors were all included in the definite and almost bold patterns. Next he turned to the French styles for his inspiration and after

studying them assiduously he found the rococo textiles most suitable to his new furniture designs. But he could never free himself from the structural heaviness marking his earlier work.

The third and last phase was Chinese tempered to the English taste, for which Oriental textiles had to be made or imported. The small patterned Persian silks or the Chinese damasks worked out satisfactorily for both upholstery and curtains, and others in that manner were made in Spitalfields. Beds were still important items in the textile world with their magnificently draped canopies, and Chippendale designed them in great numbers. Some had tent or parasol domes which were decidedly heavy and awe-inspiring with their cumbersome draping. A few followed the Gothic fashion while others had pagoda tops from under which hung intricately draped and patterned silks. Like other famous cabinet-makers of that age he wrote a book, and though he specified certain fabrics to be used on certain pieces of furniture, he made no mention of cotton or linen prints. Heavy silks were more suited to his ambitious ideals.

The later eighteenth century under George III saw still further changes in style. The interest in classicism did not start quite so soon in England as in France but it was just as important. Working through this change of style was another cabinet-maker of distinction—Hepplewhite. His furniture merits the word "elegant" which he himself ascribed to it. His favorite maxim was "Unite elegance with utility and blend the useful with the agreeable." The fragile looking furniture which he designed was as sound structurally as it was lovely to look at, so he certainly lived up to his text. Delicate fabrics had to be used, and the scale of necessity was quite different from that selected by Chippendale. His book, "The Cabinet-Maker's and Upholsterer's Guide"—put out by his wife after his death—made note of the vogue for cotton prints and recommended their use in several instances. As much of his furniture was painted,

those gay bits of printed cotton must have made charming ensembles.

The shield-back chair is his best known contribution to the development of furniture design, and it has a definite bearing on textiles. This style of his was partly rococo and French, and had the beginnings of classicism, too, as both straight lines and curves were included. Hepplewhite corresponds in England to the transition from Louis XV to Louis XVI and he had the flavor of them both. For his delightfully slender sofas with upholstered arms as well as back and seat, he preferred narrow striped silks as they accented the subtle curves of his designs. Damasks and armures, lampases, brocades and satins were all employed on or in combination with his dainty furniture. Small patterns were needed, too, so the slender acanthus leaf, the graceful beards of wheat, or the ostrich feathers which he also carved into his chair backs made equally suitable motifs for textiles. Damasks were made with swags of bell-flowers or husks, or to give the effect of draped silk. Twined ribbons, bow-knots, festoons and tassels were all there, but very small in scale. As most of the upholstery stuffs were applied with rows of brass nails set in both straight lines and swags, the fabrics themselves had to be of outstanding character.

In his book, in addition to the textiles mentioned above, he suggested horse-hair, plain, striped or checkered for mahogany chairs. For "Japanned chairs," his latest invention finished in cream, buff, light blue or the off-white tones, he recommended cane seats with linen or cotton cases to harmonize with the general hue of the chair. Stuffed chairs might be done with red or blue morocco leather. For an elegant drawing-room the coverings should be of "taberry or morine" in pea-green or other light color. He conceived the idea of having plain but rich silks painted or printed in naturalistic colorings with medallions designed to fit the back or seat of a chair.

Beds he felt could be of great elegance if so desired, though white dimity trimmed with fringe was suggested for neatness as well as elegance. Manchester cloths and printed cottons were both designated as suitable for draping beds. Silk and satin with linings of contrasting and brighter tones were for more magnificent apartments, and even velvet and gold fringe could be handled properly if there was a sufficiently important "dome" to be decorated. In one description he specified that the dove-colored satin curtains be lined with green silk to get "a good effect." All of those draperies were of the class that we would call fussy today, for there were wooden cornices, swags, loops, fringes and tassels.

After the middle of the eighteenth century there was much greater variety in furniture and therefore in fabrics. Everything had been scaled down, even the size of the rooms, and more thought was given to refinement. More delicate textures, too, were in demand, and the use of stiff brocatelles and heavy velvets had quite passed. The new straight lines in the silk patterns just emphasized the subtle quality of the flowing lines of the furniture. Sheraton's name must be included here, though he merits less note than his more prolific contemporaries. His furniture style is much nearer to that of Louis XVI, with complete emphasis on straight lines instead of curves. Satinwood was his favorite medium and with it he recommended dull but softly lucent satins. Striped silks were suggested for many of the designs in his book, though he also favored small panelled patterns to be used in chair backs and seats. And though he made no mention of them the fine chintzes were delightful with the warm tones of his furniture. His idea of fluted silk for his famous sewing-cases or behind the doors of his dainty book-cases was new to England. Some small patterned damasks were allowed, for the most part swags, wreaths, fans and bow-knots. Damasks for draperies with larger patterns included the lyre, acanthus, the decorated ovals, the musical

instruments all borrowed from the French. In his interiors he also used the silks with classical gods and goddesses arranged formally in nicely shaped medallions. Plain stuffs, or those faintly latticed, were used for window draperies which were festooned and draped and trimmed with tassels and fringe.

The fourth great name of this century belongs not to one man but to brothers. The brothers Adam, the *Adelphi* as they styled themselves, might well be called the first and greatest of interior decorators. They considered the ensemble of the room, and ceiling, walls, floor, furniture, fabrics and accessories were all created to blend together. The *Adelphi* as these three brothers called themselves were primarily concerned with architecture, but they had to consider fabrics, too, as they directed their use. They were the classicists, not only in their own right, but because of the artists and craftsmen they brought to England. Pergolesi, the great Italian decorator and designer, first came to England at the invitation of Robert Adam, the brother who was later appointed architect to the king. They were all completely motivated by the newly discovered art of Pompeii and Herculaneum. With this sudden enthusiasm for the days of ancient Rome, most of their time was spent on effect rather than on combining it with comfort as our friend Hepplewhite had recommended. Though they had a great vogue in England, and though they left evidences of their taste all over the country, they executed the most un-English of styles.

Fabrics that were suitable for Louis XVI furniture they could use, though they had very little inclination toward floral motifs except in swags or wreaths. Everything had to be classical, even the arrangement of fluttering ribbons was no longer in the old rococo manner. Medallions held nymphs or dancing girls in floating draperies, or a doublet of griffins or a ram's head. The other definitely formal motifs allied with this period are the flaming torch, the shell, the cupid's

bow and quiver, candelabra and the almost inevitable urn or vase. The Adam brothers favored Chinoiserie in the manner of Pillement but had no interest in the Chinese Chippendale. They were so closely allied to the French modes of the late eighteenth century that naturally the composition of musical instruments and the signs of the Zodiac which were favored in France were equally suitable with the Adam style. Armures were frequently used for upholstery, and satins and damasks and brocades were all acceptable. Cotton prints were never mentioned in connection with this vogue for formalism, which is obviously right, for no matter how fine the design, they would never have been appropriate in texture.

The colors were all pale and subtle, the off-tones of green, grey and white, though stronger color was permitted in the rugs and occasionally in the paintings. There the preference was for Angelica Kauffman instead of anyone more definite who might have detracted from their perfect compositions. Carpets were often woven to match the exact pattern of the ceiling so as to achieve what the Adelphi considered a perfect harmony. Upholstery fabrics were designed for special pieces of furniture or with a specified pattern to match that of a panel or a Wedgwood plaque. Over-doors and over-mantels in *grisaille* also fitted into their scheme of things. It was a light style and a dainty one with what one might call over-refined elaboration. And what a far cry from the rugged days of good Queen Bess!

Most of the silks demanded by the various cabinet-makers were of English manufacture. From the days of the first Flemish immigrants there had been silk-weavers scattered about England, and many of the Huguenots who had fled from France after the massacre of 1572 had settled there. Those foreigners were not allowed to live just anywhere they pleased, but certain provisions were made for them outside the city walls of London and also in Canterbury. Some years later when Antwerp was being overly oppressed by the

Spaniards other Flemish weavers joined those already firmly established. An incorporation of the silk-weavers in Spitalfields, a small community just outside London where they had all gathered together, was allowed in 1629. Then in 1685 came the great horde of French workmen, for after that date the Huguenots were no longer at ease in France. As many as a hundred thousand settled in England alone, and almost all of them were skilled workers of one sort or another. There were silversmiths and jewelers and makers of clocks and watches, but the great majority were weavers. Naturally they gravitated to Spitalfields where they found their compatriots already well-established and carrying on a small but thriving business.

The first real silk mill in England was, so it is said, started in Derbyshire in 1717 by John Lombe, who had learned all the secret processes in Italy. In 1732 another record proves that permits were granted for the setting up of three Italian machines whose weavers were allowed to work in the fashion to which they were accustomed. Soon silk-weavers were scattered from Yorkshire to Norfolk, and there were some in Cheshire and others in Essex. But the greatest center was that of Spitalfields where an ideal community had been gradually forming. In fact so far-reaching was their fame that that name came to be applied to all silks woven on a handloom after the manner of the Huguenots.

For a time in the middle of the eighteenth century England threatened the supremacy of Lyons. The patterns they made were those demanded by the various style-setters, though scattered floral motifs seem fairly typical of their best eighteenth century silks. Their costume silks they modelled after those of the French, for the fashions were closely allied. The weavers worked in their homes as they did in Lyons, and turned in the finished product to the master who had supplied them with the yarn and the pattern. After the middle of the century the number of the looms had in-

creased to several thousand, and their prosperity seemed assured. But hard days were ahead because silks could be imported so cheaply that were equally fine or even better in texture, pattern and workmanship. To protect them Parliament passed a law in 1773 prohibiting the importation of foreign silks but that seems to have been of questionable benefit.

The nineteenth century brought them more trouble and after the ban against imported silks was lifted the poor weavers of Spitalfields lost their hold rapidly. A school was established there under a master and designs were made that should have been a stimulus to the industry. But the fickle public had swung in another direction, and today there are only a handful of weavers left to carry on the traditions. But there has never been any lowering of the quality of their workmanship and Queen Mary, when ordering her trousseau in 1893, selected practically all of it from Spitalfields patterns. The fabrics included the silk for her wedding-gown, as well as numerous other magnificent robes of state, and the costumes for her ten bridesmaids. It is most unfortunate that the great commercial activity of England's cotton mills should have so completely swamped or eclipsed the fine work of this little group of artisans.

The *Regency* does not belong to the Georgian era but corresponds in a general way to the First Empire in France. In fact the fabrics of the two were closely related. The time had come when there was less nationalism in textiles, for all strove to follow the artistic trend of the moment, no matter in what country it had originated. The Regency silks were over-elaborate, despite the grace of their classical ornamentation. But the English patterns were never so ostentatious as the French—they had no Napoleon to cater to—and they achieved a brilliancy that had no thought of being pompous. Rich silks and damasks with formal patterns that were certainly an improvement in color over those of the First Em-

pire were in general use. Rooms took on individual color tones, and one had a blue drawing-room or a red library and so on. Walls, curtains, and upholstery, all equally grand, were of the same hue. They favored lemon, apricot, Chinese pink, rose pink, silver, cream, lavender, crimson, light green and gold—all charming colors full of personality without being strident. There was a spontaneity to the colors of the Regency which had no parallel in France.

For the most part nineteenth century England was interested in cotton and the machinery for its production. That mechanical flair was one of the thorns which caused the inauguration of the Arts and Crafts movement in the middle of the century. Largely stimulated by Carlyle who sought and preached originality, they endeavored to overcome the dreariness of the repetitiousness of machine-made products. Though there was some feeling for individual designs as a result, nothing worthy of note in a textile history came of it. William Morris and his struggles for freedom from the machine made a far more lasting impression.

A few pleasant patterns were made during the reign of Queen Victoria, but nothing notable. The pre-Raphaelite movement which produced something different, if not new, in the field of art, had no echo in fabrics. The formality of classical textiles had already been discarded in favor of realism—but a realism without much force or character. After 1860 there was a definite decline in the silk production and all textile enthusiasm was centered on the production of cottons.

One other branch of the textile industry must be mentioned here and that is the making of Paisley shawls. Late in the eighteenth century Colonel Harvey started the weaving of patterned shawls, using silk and wool, and taking the handsome Kashmir shawls from India as his models. Before long various factories were turning them out and the town of Paisley in Scotland gave them a name. At one time sev-

eral thousands of workers were busy weaving those shawls on old-fashioned draw-loom. Aside from a general likeness in color and pattern they were quite unrelated to the works of art that are true Kashmir shawls. The colors included all tones of brick-red, rusty black and sometimes bits of blue and yellow, and the universal motif was the cone or pine bending over at the top. The vogue lasted until about 1850 or 1860 when due to a change in fashion they were no longer in demand. The little town of Paisley, that had originally been famed for silk gauzes and fine linens, survived its boom and went back to normal conditions, though today their mills turn out cotton thread instead of textiles. Present day England is one of the leaders in the manufacture of cotton goods, her chintzes and linens are always in demand, her wool weaves are unsurpassed in quality for clothing, but her silks are of little importance.

CHAPTER XXII

The Nineteenth Century Fabrics of France

1

THE DIRECTOIRE STYLE

THE Revolution abruptly terminated practically all interest in fine arts and crafts, for the artisans as well as the leaders of the people were all burning with the great desire to liberate France from the financial tyranny of her kings. The first breathing spell came when the Directory was established in 1795. Then people looked about them at the destruction that had been wrought and began to devise ways and means of regaining their lost hold on things artistic. This brief four year interval was not enough to see many changes, but the term *Directoire* is in a general way applied to all that period between Louis XVI and the establishment of the Empire in 1804. Those who wish to discriminate carefully can find motifs of the *Consulat*, too, but it should all be considered as a transitional period.

The *Directoire* style carried on the restrained classicism of Louis XVI, but in a heavier way—with a suggestion of the massive style that was to follow. There was a very gradual loss of grace, with the introduction of further classical motifs. Pompeii still provided the basis for most of the designs which were part Roman and part Greek. Furniture

done in the Pompeian manner was the latest craze—couches and chairs with rolled over backs, and tables copied from those pictured on the walls of Pompeii. The ladies even adopted a kind of Roman dress re-designed to suit their sophisticated taste.

Though the looms at Lyons had been reduced from over eighteen thousand to about two thousand they were still the source of all the silks in the new mode. Louis XVI patterns were quite in harmony with the new fashion but they were not the last word—and besides it was just as expedient not to have any leanings toward the royal régime. Therefore new fabrics were in great demand. Small figured velvets that were soft in texture competed with damasks. Satin that could be draped so delightfully was particularly appealing and moiré was gracious and at the same time sufficiently formal. Leather had a new vogue and of course toiles were always in demand.

Medallions enclosing portrait heads or scenes from classical days were used in abundance. The urn, torch, acanthus, anthemion and lyre were all borrowed from their Roman models, and swags appeared on everything. Cupids and bow-knots were a compromise between Rome and eighteenth century France. Flowering sprays occasionally supported lions and griffins or rams' heads. Lozenges with clipped corners and wreaths of laurel were important parts of the set patterns. It was a revival of classicism without doubt, quite distinctive from the daintiness and fineness of Louis XVI, but comparable to the style in England then being fostered by the Adam brothers.

All of these formal patterns were rendered in clear colors. White, red and blue were the favorites, each strong and not blended together as they would have been in the previous period. A white pattern on a green or a golden yellow ground was used for upholstery, or brightly hued satins with stripes to emphasize the vivid color contrasts. Furniture was still

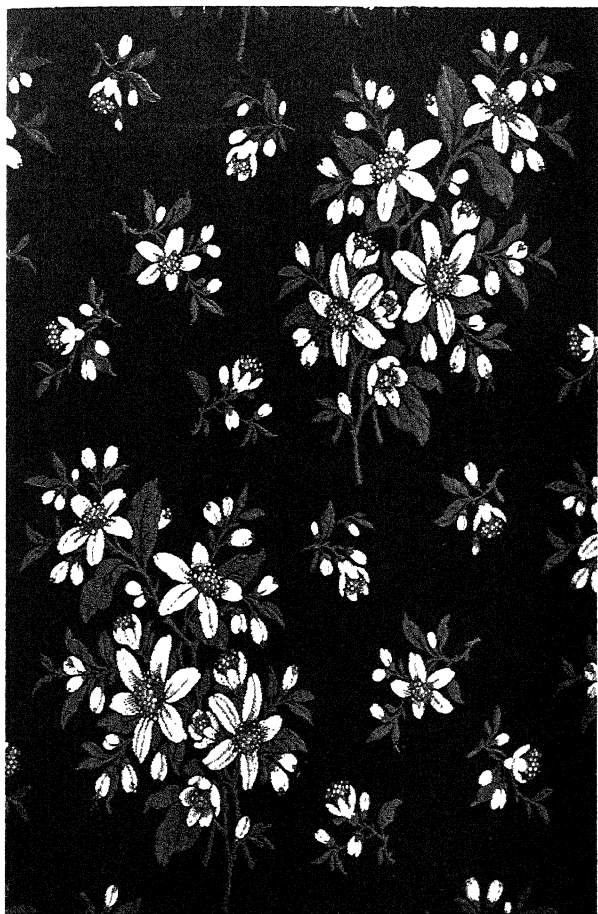


PLATE 35. A brocaded satin woven at Spitalfields to the order of Queen Victoria for a dress for Queen Alexandra on her first arrival in England in 1863. *Courtesy Victoria and Albert Museum, London.*

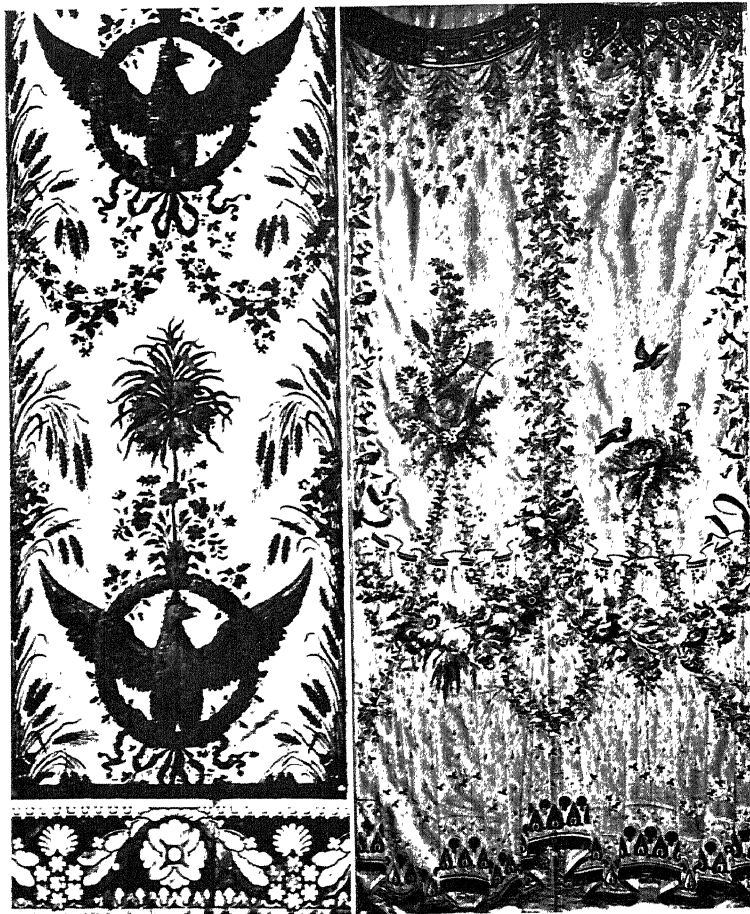


PLATE 36. *Left.* An Empire brocade with the traditional eagles and laurel wreaths brocaded in gold against a white satin background. Made by Chuard, this piece was destined for Prince Murat's Imperial Palace in Milan.

Courtesy Musée Historique des Tissus, Lyon.

Right. A remarkable Directoire silk designed by Bony. It represents a drapery of white tulle embroidered in gold and silver hanging over a foundation of pale blue satin.

Courtesy Musée Historique des Tissus, Lyon.

covered *en suite*, and tapestries, fine in weave and design, or painted silks or velvets were seen in many formal rooms.

The dominant figure of this age was the artist David. He was the real style director and the leader in the world of art as well as in the world of fashion. Though he had been a royalist who worked for Louis XVI he had turned with the tide and was one of those who signed the king's death warrant. As he had been an ardent patriot through the Revolution so was he equally ardent as the leader of the new school of artistic endeavor. He had a real flair for Roman classicism and had studied in Rome as one of the winners of the coveted Prix de Rome. Such a powerful personality as his was bound to have its effect and where he led the public followed. He was the one who brought about the change in fashion which affected women's dress, and he is also credited with the rather stupid affectation of that time—the posing as Romans and the carrying out of public fêtes done in the old Roman manner. He was the dominant force in art for almost fifty years, as he was also a favorite of Napoleon's. His unfinished portrait of Madame Recamier is one of his better-known paintings that provide us with details as to furniture, costume, and manners of the period. But this Directoire style is only an interlude, an introduction to what was to follow.

2

THE EMPIRE

The meteoric career of Napoleon is one of the greatest romances of the world. For any one man to have done so much in such a short time, and to have made a lasting impression on the entire world is an unparalleled feat. He left the stamp of one man on everything from politics to textile designs. It is not the age of Napoleon which gives us certain

colors, patterns and textures—it is Napoleon. Having had practically no art training as a child, and having lived only a soldier's life until he made himself emperor, he had little perception of what might be in good taste. But he was always alert, and it was his ideas that were interpreted by the leading artists and designers of his day. From each foreign campaign came something new, for he was able to recognize quickly the emblems or motifs of each land that were distinctive, and he promptly took them for his own. We almost forget sometimes that the laurel wreath had an ancient and honorable start back in the days of glorious Greece, for we are apt to think of it only as one of the emblems of the great emperor.

The so-called Empire or Napoleonic style was a direct outgrowth of the Directoire, but somehow we feel that if he had not liked that simple effort toward severe classicism he would have discarded it as easily as he did most traditions. The Empire is the least French of all styles and stands quite apart in concept, treatment and design. It is a reflection of Republican Rome rather than imperial Rome and it was bombastically classic to the last degree. In fact so thoroughly Roman was it that they overdid everything that had been conceived in the days of ancient Rome. If the ancient Roman leaders bedecked themselves in silks, then Napoleon bedecked his palaces and his followers as well. There are others who ascribe the source of the whole Napoleonic style to Egypt, for he brought back with him from that campaign many new ideas of magnificence as well as valuable souvenirs of the ancient Pharaohs.

What an imposing spectacle was his coronation in the Cathedral of Notre Dame! As we see it in David's picture the Pope is seated at one side, for you remember that though Napoleon forced the Pope to come to Paris for this great event, he himself took the crown from the Pope and put it on his own head. But in this great picture, which is perhaps one

of David's best, Napoleon is in the act of crowning Josephine. There is a riot of color from rich textures, from fur and from jewels. Embroideries of gold just added a dazzling surface to the materials that were already brilliant. The jeweled crown was in that instance important, though in most of Napoleon's portraits, and they were many, he preferred to be crowned with a simple wreath of laurel. But in what contrast were the luminous satins and velvets and gold!

Nothing that was left over from the old régime in France appealed to him, but it is fortunate for us that he did not disturb the structure of any of the great palaces, and even allowed the decorations of Le Brun to remain as they were at Versailles. But the rooms which he took over for his own use were all redecorated with such severely simple backgrounds that they seem almost uncomfortable. The theatrical contrasts which he so thoroughly enjoyed were achieved by the brilliantly colored costumes of the court vibrating against the cold and cheerless classical backgrounds. A certain lack of appreciation for personal comfort may be accounted for by his simple soldier tastes which were constantly at war with what he thought should be the tastes of the world's greatest figure. He realized that he must impress the masses as well as the throng about him with the power that was his.

He liked magnificently brilliant textiles which were in such dramatic contrast to the severe furniture styles. Though the heavy and often cumbersome pieces were made of beautifully grained woods and decorated with finely designed bits of gilt bronze they were nevertheless severe. Most of the solid and heavy chairs and sofas had developed from those of the Directoire period, while others with scoop backs had been copied directly from Rome. They were all luxuriously upholstered and so arranged that the fabrics reflected in the shining surfaces of the highly polished woods

used for chests and tables. The beds were amusing and look decidedly uncomfortable. Some were shaped like gondolas, others like sleighs, all were short and very hard. Some few had posts, bundles of lances with liberty caps for finials, and those that had canopies were topped with screaming imperial eagles.

As Consul, Napoleon had aided the weaving industry in Lyons but it was the embroiderers who were more than busy, for the new fashions emphasized splendid hand-work on plain but brilliant silks. After he became emperor he did even more to keep the looms busy, and at one time when the workmen appealed to him, he declared that all the robes of state must be of silk. It was then that he ordered new silks for draperies and upholsteries for the various palaces—Fontainebleau, the Tuileries, St. Cloud, Meudon, Compiègne, and even his headquarters in Rome and Florence. Many that were not put in place were ordered for the Throne Room at Versailles. The empresses, first Josephine and then Marie Louise, were surrounded with new and sumptuous silks, and for the little King of Rome nothing could be too magnificent or too costly.

Even in this way Napoleon loved to show his sense of power—he could redecorate as he pleased the great palaces of France. Walls were draped with silks with just occasional fulness, quite unlike the padded boxes of the old days. But on the other hand three or four sets of curtains were used at the windows and elaborate valances and cornices finished the tops. Borders were especially woven to trim the edges of the draperies, and sometimes two textures were combined. All lustrous silks were in vogue, and none of the dull rich weaves found any place in this magnificent scheme of decoration. The emperor was intensely interested in the development of toiles, too, as has been mentioned, and directed their use as often as possible.

The Napoleonic motifs seem particularly well-known,

and a gold and green silk damask with a spotted wreath pattern can always be identified by the veriest novice in textile designs. Eagles and torches and Greek lamps were relics of his conquests as were the laurel wreath and the honeysuckle and the acanthus. From Egypt he borrowed the sphinx which adorned so much furniture as well as many silks and embroideries. Greek-keys and other classical meanders and all forms of the anthemion were woven into borders. Goddesses and Cupids, either as grotesques or as full figures, took part in scenes of classical grandeur. The helmet of Minerva and the thunder-bolt of Jove became decorative motifs alongside of winged lions and griffins. Occasionally there were flowers, though the preference was for garlands or wreaths of ivy or myrtle. The imperial letter N centered in a laurel wreath was woven into silks quite as often as into tapestries. There were numerous other emblems, too, all reflecting his military prowess.

Probably the two best known small motifs that identify Napoleonic design are the star and the bee. The use of the latter is extremely interesting for there are so many stories as to how he came to adopt it as an imperial insignia. One writer claims that Napoleon was not satisfied with the fleur-de-lis as having come only from Clovis, but went back of that king to his father Childeric. His tomb had been opened in 1653 and among other things had been found a handful of *fleurons* of gold inlaid with red stones. When the emperor saw them years later they reminded him of bees and he thereupon adopted them as his insignia. That tale seems slightly far-fetched and some of the others may be nearer the truth. The Barberini family in Rome included the bee in their family crest, and Napoleon's victory of them as part of his Roman conquest meant their downfall. Hence the emperor is supposed to have taken their bee as significant of his dominion over all Rome. The bee was also symbolic of the king of Upper and Lower Egypt, so again that em-

blem expressed his rule over foreign lands. Of course it is barely possible that he liked the bees because they were symbols of Corsica, because they were an ancient symbol of immortality, or he may have greatly admired their diligence and hoped thus to inspire all those about him. Whichever version of the tale you prefer to accept, they are a distinctive emblem, and in the Throne Room at Fontainebleau you will see both stars and bees embroidered on the imperial curtains that surround the throne.

The Empire colors were quite as striking as the patterns. Red and green combined with gold appeared on all sides, a clear yellowish green, and a hard brilliant red. Pale blue and grey and off-white were used for the lighter hues but they seemed to be absolutely lacking in character in contrast to the more usual glowing tones. Blue and golden yellow, tobacco brown and purple were all lively and when translated in shiny fabrics had a brittle jewel-like quality. Only one personality could have dominated such strong colors and shining surfaces. Josephine is said to have had more subtle preferences which were quite ignored. When Marie Louise replaced her, crimson and the imperial green and the golden yellow ran rampant. It was well she liked them, for it seems quite safe to say that even if she had favored other colors, there would have been little demand for them, for this was a one-man show.

There were some outstanding personalities, however, who expressed the emperor's tastes. David was the greatest power and with him worked Percier and Fontaine. They were interior designers and did for furniture and textiles what David did for painting. They designed wallpapers and carpets, furniture and fabrics, and all the accessories to complete their projects. Malmaison was their first big piece of work, and even though today it seems slightly appalling in its decorative taste, perhaps if you can transport yourself back to the days of the Empire you can get more pleasure out of it.

Everything was severely simple and done quite in the Roman manner.

To this early nineteenth century belongs one of the most important personages in textile history—Joseph Marie Jacquard. Born in Lyons in 1752, as the son of a weaver, with his mother a pattern-maker, a knowledge of the loom was his greatest heritage. He later inherited from his father two looms and on them worked out improvements in the device that had already been conceived by others. He showed his first machine in 1801 and it was immediately met with storms of protest and he was roundly abused by his fellow-weavers of Lyons. Nevertheless he persevered and in 1806 Napoleon granted him an annuity provided he would continue to work in Lyons and perfect his invention. He did not invent or change the loom, but his is the attachment which by a series of cards with holes punched in them to correspond with the pattern, however simple or elaborate, controls the raising and lowering of the warp threads.

Machinery has progressed rapidly since then and it is a far cry from that loom of Jacquard's which you can see in the Musée des Tissus in Lyons to the huge affairs of polished metal which are the Jacquard looms of today. But the principle is the same and very few changes have been made since he worked it out. Any elaborately patterned fabric of today is woven on a Jacquard loom. The story is told that Napoleon said to him

Are you the man who can do what God cannot—tie a knot in a taut string?

To which Jacquard's reply was

I cannot do what God cannot, but what God has taught me to do.

In the silk world Bony was the brightest light of Lyons and to him can be credited the charming silks made for

Marie Louise's use at St. Cloud. The birds and flowers and bits of lace were certainly not in the imperial manner. He had an excellent idea of balanced patterns and his colors were clear but not ostentatious. One of his best silks looks like the finest and gauziest of net hung over pale blue satin with a slight effect of drapery. Others were done in the Pompeiian manner which showed his highly developed sense of rhythm. This artist foreshadowed a bit the change which was to follow the austere magnificence of the First Empire.

Of course this style survived the downfall of the Empire for anything as strong and vital could not be killed quickly. Fabrics woven at Lyons for the empress were used later during the Restoration by Louis XVIII and Charles X. The imperial emblems had then for the most part been replaced by the crown and the fleur-de-lis. The newer style, if so it can be called, really developed from the Directoire rather than from the Empire, for though still heavy there were some elements of grace. But no matter how perfect the technique, there seemed to be no inspiration back of the new textiles. The old flair was gone, the artistic sense of France had been temporarily dulled by an over-dose of Roman classicism.

Some few fabrics made under Louis Philippe were a bit different, but really only a rehash of what had gone before. They seemed to prove that the fine daintiness of Louis XVI figures might be combined with the sweeping rococo curves of the previous century to the detriment of both. Under Napoleon III there was a love of luxury that almost equalled the old days of the First Empire, and the Empress Eugénie commanded splendid silken robes of state. But they were not a reflection of the new régime, they were just soulless copies of former glories, and an age of copying was of no benefit to the weavers of textiles. The master at Jouy was no more, banal cottons took the place of the lively toiles, the

weavers at Lyons were still creating gorgeous textures of varied hue, but there was no inner fire to make them live. The great days of France were gone—and who are we to know if they shall come again.

American Weaves and Patterns

THOUGH we are very apt to think only of contemporary or Colonial textiles, the history of weaving in America dates back to prehistoric times. As was true on other continents the art of weaving was one of the earliest evidences of culture. However, the proof of equal skill among the primitive American Indians has been a little more difficult to establish. Where implements of stone, metal or pieces of baked clay have stood the changing elements of centuries, the textiles have long since disappeared. Nevertheless we have some knowledge regarding them and each year adds a little more to this interesting history that is gradually being pieced together.

Weaving tools have been found and it has even been possible to reconstruct one of the earliest looms which indicates an advanced degree of skillfulness on the part of the worker. But one of the greatest aids to a knowledge of the fabrics themselves comes from pottery. Ancient bowls, jars, ewers that have lasted through the ages show the imprint of woven fabrics. It is evident that instead of decorating the form after it was modeled they wrapped it with one kind of fabric or another which left its impression on the damp clay. As this cloth was not essential to the making or baking of the pottery it must have been employed only as decoration. From these early patterns on pottery comes the evidence that the primitives knew how to construct various weaves, including what we call a basket-cloth, a kind of rep or twill, and also

leno or gauze. There are in addition some open patterns not unlike those we find among modern embroidery stitches. Warp threads were grouped together and fastened by a peculiar knot in the weft, then divided and pulled to each side to form a kind of open diamond.

They had flax and hemp to work with, all kinds of grasses for coarser weaving, and the soft silky buffalo's hair as well as rabbit and opossum for their finer textures. It was somewhat later when they discovered the possibilities of sheep's wool. From the various Indian tribes have been gathered the proofs that they were all familiar with cotton, perhaps from prehistoric times. Archeologists claim that cotton has been grown in America since some hundreds of years before the Christian era. The looms were not unlike those of other primitive people and their mode of weaving much the same. In some tribes, however, instead of a bobbin or shuttle to carry the weft, they fastened the thread to the end of a long cane which they thrust through the open shed of the warp which had been made with long but slender rods.

The American Indians had a highly developed sense of design and created some most complex geometrical patterns. They not only wove them into their fabrics, but they also knew how to paint them on their heavy cotton cloths. The Hopis were artists of special merit though the textiles of the Pueblos were far more skillfully conceived. The Navajo tribe still stands for superiority in weaving because of their splendid blankets or rugs. Though they learned the art from the Pueblos they advanced far beyond their teachers and today they follow the same methods that they perfected some hundreds of years ago.

In the ancient days the quality of their wool was superior because they had their own flocks that were carefully guarded and tended. But now they have simplified and modernized their production of fine blankets by buying Germantown wool all made up into yarn ready for the weaving. Their

looms they still set up for the finished size of the blanket they wish to make and instead of a shuttle they prefer small twigs or sticks. Where the design is very intricate and where the colors are changed every few inches, instead of sticks they use small balls of the wool which they thrust through the warp with their fingers. For a fine and complex pattern there are sometimes as many as thirty balls required, all hanging on the surface ready to be used when needed. That is not a very rapid method of work and even in the old days when it is probable that the craftsmen were more skilled than they are today, it took an expert weaver at least a month to make a small blanket approximately 5' 6" x 6' 9".

Because these hand-woven blankets were always sold by weight—and still are—it did not take them long to find ways and means of cheating the trader who handled them. As the other tribes all acknowledged the superiority of the Navajo blankets their only difficulty was in turning them out rapidly enough to meet the demand. They discovered that a blanket of mediocre quality if carefully filled with wet sand weighed as much as a good blanket. But the traders soon caught on to that trick and refused to buy a blanket until it had been dried in the sun under their own supervision and then given a thorough beating to rid it of any foreign substance.

An Indian blanket achieved beauty and importance according to the clever arrangement of the colors and the intricacy of the pattern. Their development of dyes is worthy of note because they devised such ingenious methods for securing fast colors. The Navajos were particularly fortunate because they already had three colors of wool, an almost pure white, a grey and a sort of rusty black. The brilliant red of which they were so fond they got from a scarlet cloth which they could buy from the traders, though in the earlier days it was made from the bark of a tree. Perhaps most ingenious of all their dyes was the black. They

first boiled up the twigs and leaves of aromatic sumac. While that was brewing they took a kind of native yellow ochre, powdered it between stones and then roasted it over the fire until it was a light brown. Following that it was mixed with the gum from the piñon and put over the fire again. From being a heavy gummy mass it gradually dried out in the roasting until it resolved into a fine black powder. Stirred into the original brew it produced an excellent permanent black dye.

The Cherokees were noted for their handsome carpets made from wild hemp, which they painted on both sides. Instead of pure geometric design they favored conventionalized birds and animals and sometimes personages. Other tribes made soft garments from buffalo's hair which they adorned with bead-work, a characteristic of early Indian work which has survived to our day. The Southern tribes along the Gulf specialized in elaborate shawls or cloaks which they wove from the inner bark of the mulberry tree. Another art at which the American Indians were adept was the weaving of feathers into magnificent outer garments for ceremonial occasions. We can refer to John Smith for information as to their perfection and beauty for speaking of the Indians in Virginia he said,

We have seen some use mantels made of Turkey feathers, so prettily wrought and woven with threads that nothing could be discovered but the feathers.

But all that was native American weaving and bears little relation to our present advancement in the textile arts. For the beginnings of our great modern industry we need go back no farther than the colonial days. And there we find a diversification of weaves, patterns and fibres which is fairly representative of the various nationalities who ventured to this new land. There were the Puritans who settled in New

England and driven by England's domination later started their own textile factories along English lines. In New Hampshire the Irish, who had been weavers at home, established their own colony and continued their own type of work with linen. The Dutch in New Amsterdam built up a thriving "cottage industry" for they were indefatigable workers and practically all of them had been able to weave before they came to this country. The Mennonites in Pennsylvania were equally industrious and every cottage had its loom. There were also some Scotch weavers who followed their traditional methods. All of those early textiles were expressive of that time of stress, of people groping for peace and happiness through work. They were simple, structural and made to fill the need of the moment. Farther south the general feeling was toward importing all the textiles and spending their time on growing tobacco which was so much easier than spinning and weaving.

Going back to those hardy New Englanders who had left England so little prepared for the rigors of the new land, they had of course brought clothing with them and such few textiles as were essential to the establishment of their new homes. They could not know that it was going to be increasingly difficult to get more from their mother country. Nor had England at first realized that the simple weaving of the colonists might cut into her own trade. She was just establishing herself as a textile center and looked upon her colonies as one sure outlet for her merchandise. Practically every New England home included a loom and every good wife could make the fabrics necessary for clothing her family and for dressing her beds. And the dining-table was not forgotten for even in those early days they wove excellent table linen. They were not professional weavers by any means but they soon learned how to make stripes and checks and the more adventurous even managed small diaper patterns.

They spun their own yarn—wool, linen or cotton, and made their own dyes. Though they raised a few sheep from the very early days most of the wool had to be imported. Flax was not difficult to grow and in that the colonists were encouraged. The "Cotton Wool," for the most part, came from the West Indies. You will remember that Columbus had found the natives of San Domingo all clothed in cotton and that he took back with him to Europe not only pieces of cotton cloth each sufficient for a garment, but also some of the yarn and even the cotton in the raw state. With all these fibres available and with the pressure of necessity spurring them on it did not take the New Englanders long to start the wheels of a real industry revolving.

The first known textile factory was established in 1638 near Ipswich, Massachusetts by Ezekiel Rogers, the minister-leader of a group of twenty weaving families who had migrated from York. They wove wool mostly though later flax and cotton were included. It was about this same time that the colonists realized that they must conserve and increase their wool supply. It was even urged in a public proclamation that anyone known to be coming to the colonies be asked to bring lambs with them.

The fabrics that they wove were simple and yet adequate for their needs. The houses were for the most part small and their furniture plain, for despite the many stories to the contrary the *Mayflower* was not filled with wondrous pieces of furniture, nor did the ships of the next decade bring any amount of English furniture to the colonists. The colonial craftsman made furniture of the woods at hand, pine, maple, ash or the fruit woods, and for his models he used his remembrance of the prevailing styles in England or Holland. In such simple interiors the wools and coarse linens seemed quite the wisest choice. Clothing, too, was more valued for its practicality than for its fineness of texture or design. The colonists cared little for changing modes with the seasons.

Dull green, grey, black, blue and red were the sombre colors that they wove most often. But they were pleasant hues to live with and in the room where there were highlights of pewter and copper and glass and silver there was a low-keyed but decidedly pleasing and harmonious ensemble.

Those simple fabrics woven at home were augmented by the rich silks and velvets imported from time to time, though it was not until the eighteenth century that furniture and fabrics became commercially important. But there were other ways than the trading-ships for the elegant gold brocades of the east to reach America. Many a ship returning to England or France from the Orient fell into pirates' hands—pirates who found a good market in America for their plundered treasures. Then, too, the later colonists had their own sea-faring families, especially in New England, who after long voyages of several years perhaps, returned laden with exotic gifts for their waiting families. There were fine shawls, lengths of brocades or damasks, sheer muslins from India and even the printed cottons that were such a fad in England. They were the fabrics to be treasured, to be handed down to succeeding generations as highly-prized and valued bequests.

In the meantime the southern colonies were being encouraged to grow flax and cotton, and even silk, for England thought that all such small industries would help the great ones at home. But tobacco soon became their greatest output for their land was well-adapted to it and it was so simple to market. The southern colonies by that one product alone were able to establish a balanced trade that was not possible in the north. They could trade their tobacco for silks and fine cloths with gold interwoven in intricate and beautiful patterns. It was only in the middle of the seventeenth century when Cromwell put a tax on tobacco that these colonists were forced to look into their own textile situation. They then began to develop their own resources

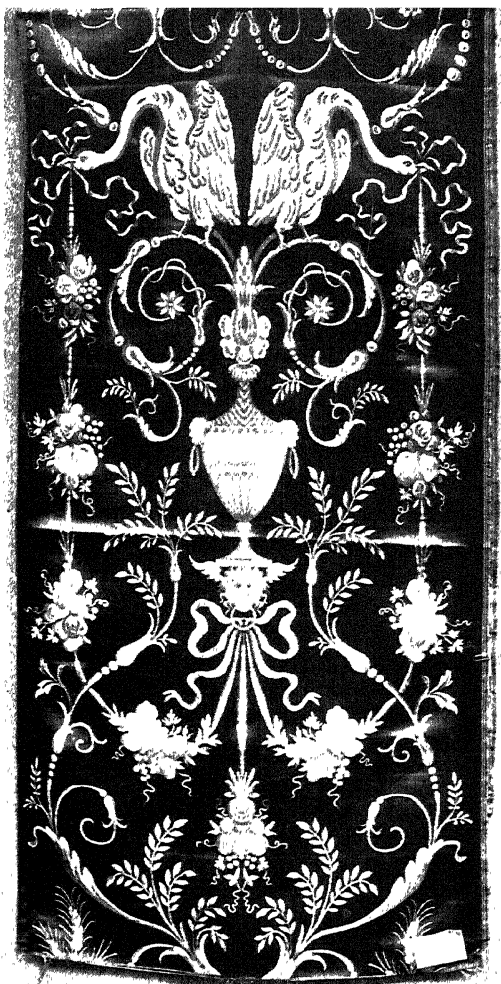


PLATE 37. A rich silk of the Louis Philippe period—1830-1848. The delicately graceful design is brought out in cream against crimson.

Courtesy Metropolitan Museum of Art, N.Y.

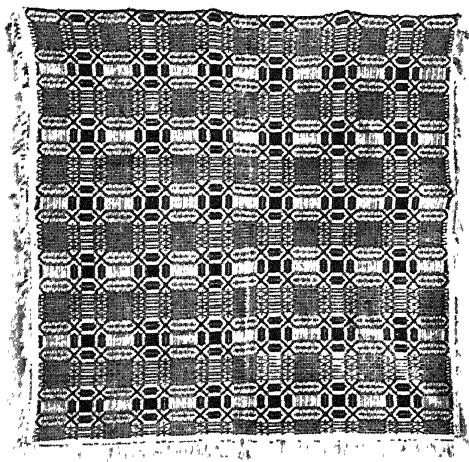


PLATE 38. *Top.* An American coverlet woven in the early nineteenth century.

Courtesy Metropolitan Museum of Art, N.Y.

Bottom. A bit of the famous blue and white printed cotton made in America in the eighteenth century. It is said to have belonged to Katrina Van Wie of Albany, who was married about 1792.

Courtesy Metropolitan Museum of Art, N.Y.

and once more a prohibitory English law was of great value to the growing colonies.

The names, qualities, colors and textures of the seventeenth century fabrics were widely varied. The most complete information regarding them can be found in diaries, in wills and in the inventories of estates varying from the richest of the land-owners to the poorest of the artisans. Quantities of these illuminating manuscripts are quoted in Mrs. Little's comprehensive book on "Early American Textiles." Every person had certain things of value which he wanted to leave to his heirs and those lists of effects tell a complete story of the life of that time. Sometimes the entire contents of a chest of house-hold linen was noted, sometimes just the hangings for a bed or window, and sometimes the hand-decorated pieces that embellished cushions or cupboards or chimneys. Those "cubberd cloths" varied from brightly-colored plain fabrics to damask and needlework, and even the poorest families had curtains and a chimney-cloth of calico. They had wool goods of all the varieties known in England—says, serges, druggets, and even tabbys and sarcenets. Color seems to have been of importance, too, for Edward Keene made note in 1653 of

curtains of red perpetuana, which seems to have been a smooth worsted weave, perhaps with a double or triple warp and single filling. Its warm and cheering effect in this hue was apparently much appreciated by the Colonists for it is found more than once in this shade.

By the latter part of the seventeenth century life had become a little easier and the colonists had more time to consider ways and means of combining beauty with utility. About the same time comes once more an echo of the Revocation of the Edict of Nantes in France—even in the far-away American colonies. Some of the more adventurous weavers driven from France had migrated to the new land

of promise and with them they brought an air of sophistication that had previously been entirely absent. The increased use of rich textiles even warranted the establishment of upholstery shops late in the century. Turkey-work was quite as popular in America as it was in England and many of the lists of goods and chattels included a number of Turkey-work chairs. Others were covered with velvet or damask or embroidery, the latter of *petit point* or crewel depending upon when it was done.

The hangings for the best bed were frequently the most valued possession and it was a poor person, indeed, who did not have a bed draped in some way. Among the northern colonists where the early houses, patterned after the simple English cottage, had only two rooms the best bed occupied a place of importance in the parlor. It might be hung with their own hand-woven muslins or worsteds, or it might be gorgeous with silk and embroidery. A gentleman of considerable estate, including a large house, who died in Salem in 1685 left a long inventory of his textile possessions,

Curtains and valances, sometimes of white calico, are found in almost every room, and in the "Glase Chamber" was a painted cupboard cloth as befitted a cosmopolitan who was in touch with European fashions. The kitchen chamber was unusually well furnished for it had a pair of red serge curtains and valances with rods, and a quilt of calico, colored and flowered.

Another interesting list of 1695 included a

Painted chimney-cloth, six satin cushions with gold flowers, two Turkey-work carpets, curtains with silk fringe, and some of white flowered muslin.

The story of eighteenth century fabrics in America might well be divided into two classifications—those made of cotton and those made of silk. Not that linen and wool were discarded, but they were less important than they had been

in the previous century. The Revolution also marks a distinct difference in the fabrics, for up to that time weaving was essentially a home craft. But after the Revolution, with the introduction of all the mechanical devices to speed up the work, it became a commercial industry.

The few painted and printed cottons that had reached America in the seventeenth century were especially prized because of their rarity. They were also decidedly expensive and only available to families of great wealth. The best Indian designs could be found in the familiar bed covers and wall hangings with the strong central tree and the brilliantly-colored foliage against a cream background. Some of the copies made by the English and Portuguese also reached the colonies, and those made by Robert Peel in Lancashire were special favorites in America. But they, too, were rarities in the early part of the century and the first record of a shop handling them seems to be in the year 1712 when a "glazed chince" was advertised in a Boston paper. The craze for these gay cottons seems to have run parallel with that in England until it was temporarily checked by the Revolution when all English prints were forbidden. That, however, marks the time when our own designers and printers discovered that they could do very well in that line themselves.

In 1751 Benjamin Franklin recorded the noteworthy fact that a burglar had entered his house and purloined his wife's dress,

a woman's dress of printed cotton of the sort called brocade print, very remarkable, the ground dark, with large red roses and other large and yellow flowers, with blue in some of the flowers, with many green leaves, too.

Some seven years later when he was being fêted in England and France he wrote to his wife that among other things he was bringing her

56 yards of cotton, printed curiously from copper plates, a new invention, to make bed and window curtains.

Copper-plate printing was decidedly something new and to be wondered at for previously all such prints had been made with blocks. The prints thus made at Jouy were all the rage thereafter, especially those that pictured American scenes, however inaccurate, or American heroes.

It was largely due to Franklin's influence that a calico print-works was established near Philadelphia in 1772. It was under the direction of John Hewson, an Englishman who later became a staunch patriot and fought in the Revolution. In 1774 he advertised in the *Pennsylvania Gazette*,

"A Calicoe Printing Manufactory, and Bleach-Yard" and noted that "his work shall be equal in colour, and will stand washing, as well as any imported from London or elsewhere . . ." "His present sett of prints consists of patterns for printing calicoes and linens for gowns, &c., coverlids, handkerchiefs, nankeens, janes, and velverets, for waistcoats and breeches, &c."

Mrs. Washington herself visited the factory the following year and ordered some special prints to which George Washington later pointed with pride.

New England was developing a flourishing cotton business, too, centered in and near Rhode Island. Though there were a few real factories most of the cotton was given out to the weaver who worked at home and then returned the finished product to the mill. A linen factory in Boston, of which John Brown became the manager in 1762, was so well-equipped that he could make plain, striped and checked linens, bed-ticks, handkerchiefs, coating and furniture checks. Printing also began to have its place for a woman advertised in 1761 that she

stamps linen china blue, or deep blue, or any other colour that Gentlemen and Ladies fancies.

In one Rhode Island factory they printed with wood blocks and later glazed the cotton with a hand-calendering process using flint stones. From another factory you could get such alluring things as

Red, blue, and purple copper-plate furniture (hangings for the bed), calicoes and chintz furniture.

Another that seems to have specialized in stronger colors assured their clients

Saxon blue, green, yellow, scarlet, and crimson furniture checks.

Aside from these fascinating prints and the gorgeous silks which were still imported a great deal of simple weaving was carried on in all the homes. George Washington established a weaving house on his estate at Mount Vernon and there the weaving was done for about twenty-five neighboring families. This was, according to the financial records, more of an accommodation than a business enterprise. Other groups in different localities handled their weaving in the same way and paved the way for the factory system that sprang up after the Revolution. In those weaving centers stout cloths for garments and simple "furniture" for the beds which still occupied the parlor until after the middle of the century, seem to have been their chief concern.

To many people American Colonial textiles mean but one thing—hand-woven bedspreads. These coverlets that were made in all sections of the country are justly famous, for they not only show the skill of the weavers, but they show a charming appreciation for well-conceived design. They had to be so designed and woven that when the narrow strips were put together a harmonious ensemble resulted. The looms, you must remember, were not very wide and hence greater ingenuity was needed. Many of these colorful spreads had fancy names that explained the design such as

"Chariot Wheels" or "Cat Tracks." But one that was called "Bonaparte's Retreat" included only simple geometric devices—perhaps, as in some modern painting, the vision was in the mind of the creator, even though it was not apparent to the layman. The fad for these hand-woven coverlets did not die out until the time of the Civil War.

One other phase of early American textiles that inspires many an amateur is found in the so-called samplers. These precious works of art were originally made to take the place of embroidery pattern-books which were so expensive they were beyond the reach of many skilled workers. Therefore when you saw a nice pattern, a clever motif, a good arrangement of colors, you made a little sample for later reflection and copying. All these stitches combined on one piece of cloth were more picturesque than the maker realized. None of the early ones had a border or definite arrangement of design, and it was not until much later that they became primers for young hands.

Silks of all kinds were imported and as early as 1721 the English protested against the quantity of French silks going into the port of Boston. They were in great demand for draping beds, and you can but realize their importance when you read the advertisement of one merchant that he could sell Canopy, Festoon, Field, Tent and all sorts of beds.

He also had to sell on the lowest terms

Worsted Damasks, Moreens, Harateens of all colours . . . All sorts of Fringes, Bed Laces, Lines, and Tossels with every other article in the Upholstery way.

John Taylor offered for sale

Four Post, bureau, table, tent, field and turnip bedsteads, with silk and worsted damask, morine, harateen, China printed cotton or check furniture.

While some of those things may have been of local manufacture it is likely that the most of them were imported.

In 1746 in a Boston paper appeared for sale

a fashionable crimson damask furniture with counterpane and two sets of window curtains and vallans of the same damask.

That would undoubtedly have made a handsome bed chamber.

The velvets and needlework that had been the vogue of the previous century held their place in the world of fashion, but there was a decided trend toward brocatelles and damasks. In 1720 an order is recorded for

good yellow wat'ed camlet with trimming well-made.

And Governor William Franklin ordered

yellow silk and worsted Damask to suit some yellow Damask chairs and furniture I have in my dining-room.

In some localities they followed close to the contemporary English decoration and walls as well as windows were hung with damask. Rooms of one color came into fashion and furniture covering matched walls and curtains. These rooms were delightfully colorful and not the strong contrast of dark mahogany and white that we have been led to believe existed in every colonial home. As a matter of fact the colonists, early or late, used very little white. Besides the draperies of damask or satin there were often fine inner curtains of sheer mull or lawn that had been made by hand, and sometimes embroidered as well. In one old room which charms by its gentility you will find blue satin draperies hung over sheer white mull and above them imposing valances of blue and white brocade. Haircloth had its day, too, in the mid-eighteenth century and even flowered horse-

hair was used on the dainty chairs that were then being made.

The fashion trend swung gradually toward the French styles for during and after the Revolution England was not in high favor. Lafayette was quite as popular in America as Franklin was in France. From the court of Louis XVI we borrowed manners and modes and even the classical motifs that had originated in Pompeii. This French influence lasted through their Revolution and our fashions reflected their Directoire era and finally that of Napoleon and the First Empire.

Of late years we have been designating the period from 1790 to 1825 as Federal, and it certainly marks a different epoch from that of the struggling pre-Revolutionary days. It was a resplendent age—a reaction from the sober privations of the previous hundred years. It was perhaps the most typical American style yet produced, though it was built on the revival of classicism in France and England. The furniture, though resembling contemporary European styles, had a certain heavy dignity that marked its individuality, and the fabrics used with it were softer in color than those of the French Empire. The American eagle was a characteristic motif that replaced classical urns and heads. The finer textiles were still all imported from Europe but they were used with a sense of discrimination that had been gradually growing evident. Clothes were surpassingly elegant and life became more confined by forms and manners.

To understand how America reached a place of rank in the textile world we must look back a bit to the development of machinery and its importance in this growing industry. One of the greatest labor saving devices was the spinning machine which had been invented by Hargreaves in 1764. England was quite insistent that none of these machines should leave the country, but the colonists felt that they were entitled to have them if they could be got hold of by any means whatsoever. The result was that a wooden

model was constructed in England, then cut up into pieces and shipped to France and then to America, where it was reassembled in Philadelphia.

Water power was used in 1768 but the first real powerloom was the invention of a minister named Cartwright who was not even a weaver. America's greatest contribution was the famous cotton gin designed in 1793 by Eli Whitney. All of these machines helped to speed up production and take it out of the hands of individuals and put it in control of factories. The famous Jacquard loom did not reach America until 1826 when the first one was brought over and set up in Philadelphia. Since then there have been many improvements but no remarkable changes—and the great machine age has almost engulfed us. It is deplorable that we let our delightful hand-weaving slide into the discard so easily, but perhaps now we have at last reached the point where we can take time to appreciate and more fully enjoy all hand-made products. There is a charm to a hand-loomed fabric that the most intricate machine cannot equal.

One of the most noted factories was that of the Hartford Woollen Manufactory which furnished the inaugural suit for the first President of the United States. Mr. Washington's letter to his friend General Henry Knox explains the situation thoroughly.

Mt. Vernon, Jan'y 29th, 1789

My dear Sir,

Having learnt from an Advertisement in the New York Daily Advertiser, that there were superfine American Broadcloths to be sold at No. 44 in Water Street; I have ventured to trouble you with the commission of purchasing enough to make me a suit of clothes.—As to the colour, I shall leave it altogether to your taste; only observing, that, if the dye should not appear to be well fixed, & clear, or if the cloth should not really be very fine, then (in my judgement) some colour mixed in grain might be preferable to an

indifferent (stained) dye.—I shall have occasion to trouble you for nothing but the cloth, & twist to make the button-holes.—If these articles can be procured & forwarded, in a package by the stage, in any short time your attention will be greatly acknowledged.—Mrs. Washington would be equally thankfull to you for purchasing for her use as much of what is called (in the Advertisement) powder smoke as will make her a riding habit.—If the *choice* of these cloths should have been disposed of in New York—quere could they be had from Hartford in Connecticut, where I perceive a manufactory of them is established.—

With every sentiment of sincere friendship

I am always, affectionately

Yrs

G. Washington

The progress of silk manufacture in America provides a long and interesting tale though the early efforts at sericulture were all unsuccessful. There is, however, one record of Connecticut silk, grown, woven and made in that state that is worthy of mention. It was the gown worn by President Stiles for Commencement at Yale in the year 1789. Early in the nineteenth century silk manufacture became more strongly important and the first factory built by the Cheney Brothers—only one rather small room—was started in 1838. As one commentator sagely remarks, "It is from such modest beginnings that the present great industry has grown."

That is perhaps one of the happier results of nineteenth century America, for decoratively we passed through an era that is better left in oblivion, and our costumes were not much more praiseworthy. It certainly took all of that century to become firmly established in the textile world. To-day our cotton goods are of excellent quality and we lead even England in the amount produced and consume most of it. Another mechanical advancement was marked with the inauguration of cylinder-printing, and we have speeded up production to such a point that it is terrifying. Perhaps such

mechanical perfection will turn us back to the charming vagaries of hand-work.

Our woolen fabrics are adequate though we import the finest wools from England. We manufacture some linen, though, as the flax has all to be imported, it seems economically wise to bring in the manufactured product, for the countries that specialize in the handling of linen have the natural climatic requirements as well as the necessary mechanical equipment. In silk production, that is manufactured silk, not silk yarn, we produce more than Japan or China. We have undoubtedly a great textile industry with all the emphasis placed on mechanical perfection, rather than on quality or design. It is strange that in such a young, fresh, vital country there was apparently so little inspiration for original design.

Contemporary Fabrics and Fibres

WHAT one writes of contemporary design in textiles today may not be true tomorrow, for we are making such rapid strides that it is all but impossible to digest all that is presented for our inspection. If it is the Machine Age in which we are living it is also the age of renewed enthusiasm for craftsmen—even for guilds—though such a medieval name is not in today's dictionary. But new as it all is this contemporary style has been an evolution like all the others. Though we are too close to it to be able to see it with anything like a true perspective it is obvious that this new era has produced something sound, something that will live.

To recognize the progress that has been made one must glance backwards. To credit William Morris with being the impetus behind contemporary art may seem a bit far-fetched, but it was his striving to escape from the dogmatic principles laid down by tradition that blazed a trail. He made other artists realize that new forms, new systems of design and new colors were essential.

But the first real trail-blazers to receive world-wide recognition were the French. Though the Art Nouveau—a most unfortunate appellation—had been inaugurated in 1896 it was the Exposition des Arts Decoratifs et Industriels Modernes in 1924 which started the wheels revolving, despite the cat-calls of the conservatives. As a pioneer step it brought astonishing results, though today we look at the things designed for that particular show with a feeling of

amazement. But what that Exposition did prove was that a new epoch had begun where freedom from tradition was apparent, and a fresh spirit was to be acclaimed.

While France led the way Austria was busy over her own method of approach to the same situation and so added tremendous momentum. Germany followed a bit slowly, for they had tuned their ears to the industrial appeal rather than the esthetic. Sweden, which later received so much acclaim was progressing in her own fashion quite uncaring what the rest of the world was doing. America with nothing to contribute to that French Exposition of 1924 finally threw off the yoke of self-complacency and realized that of all the nations of the world we should be the leaders in this new art. England has been slow to accept it but today is exhibiting an appreciation for modernism that is second only to America.

The dominant forces back of this whole idea are two-fold and formerly widely divergent. Bands of artists and artisans have grouped together as hasn't been done since the Middle Ages and it is this agglomeration of varying interests which has produced such force. Handicrafts are more appreciated today than they have been in hundreds of years and yet this is the age of the machine. Where the two come together is on the problem of mass production. The artist who is able to create a masterpiece that simply cannot be reproduced may at the same time turn out a design that will be the delight of the manufacturer. The artist of today must know the problems and limitations of machines so that he can work intelligently with the manufacturer.

In France there have been various groups of artists banded together for the production of finer decorative objects. One might design furniture, another weave rugs, a third textiles, a fourth be a ceramist, and perhaps another a silversmith. This band had to be absolutely united in spirit—in the revolution against the stodginess of Victorianism

and the over-worked traditions of the past. The head of such a group was usually an *artiste-decorateur* who designed the room in which these various elements were to be combined. From such groups have grown some of the most important decorating salons in Paris. Perhaps the best-known of the present moment is the Primavera group under the wing of Le Printemps, one of the great department stores of Paris. Under that banner have developed some of the finest craftsmen of the France of today.

In Austria there was the renowned Weiner Werkstätte which worked so hard to raise the level of craftsmanship. Joseph Urban was one of their brighter lights as was Joseph Hoffman, to mention only two. The influence of that group was felt in other countries and the freshness and sparkling quality of color and design which they fostered has been of invaluable assistance to many people. Fabrics were important to many of these working groups and though perhaps at first more novelty was evidenced in some of the other crafts tremendous strides have been made in contemporary designs and weaves for textiles.

Going back again to Paris there are various outstanding names which have lent prestige to this new art. Though Leon Bakst was born in Russia he was far closer to the French people and considered France his home. They called him a "literary artist" because he had so much true knowledge and understood how to apply it wisely to whatever he was doing. He played skillfully with color and with texture and with form as is evidenced by his remarkable designs for the ballet. He was strongly influenced by the Oriental mind and let it dominate his work.

Paul Poiret was not merely a couturier, for his handling of designs and weaves was of great assistance to the whole French school. Raoul Dufy is probably the name which comes first to mind in this connection for he designed so many fabrics which have lasted through these chaotic years

of development and are at the moment representative of the earlier period. He was particularly interested in the textiles made with wood blocks and all of his first fabrics were printed in that way, black on a white cotton cloth. Later he permitted the use of color but his principles of design were built on the belief that color was not essential. He had a marvelously flowing line which was peculiarly rhythmic. And that rhythm was not just to appeal to the sophisticates who might buy his textiles in the Parisian ateliers, for there were some that had a strong appeal for the South Sea Islander as well. That does not suggest that they were crude nor yet "eye-splitting" but they were definitely rhythmic. He also liked abstractions and some of his floral prints have no parallel.

In the France of today the name of Paul Rodier is outstanding for he is the artist who literally designs on the loom. Coloring is also secondary to him, for both pattern and texture seem more important in the textiles which he creates. He has built his reputation particularly on the interesting combinations of weaves and textures within one piece. His sense of rhythm is perhaps not so pronounced as Raoul Dufy's but it is strong and one of his most obvious characteristics. Many people have today in their homes one of his famed designs wherein the texture is so interesting that it almost identifies it as a Rodier fabric.

The German artists have done some important things with hand-printing, developed from the ancient art of book-making at which their forefathers were so adept. Some of their most successful prints are on a very sheer cotton suitable for window treatments. There is a certain functional quality in almost all of their textiles which proves how important that principle is even in textile design. But it is said that the functional idea which has been the basis of such controversy among modern artists was really started in Austria. Vally Wieselthier who is perhaps better known for

her ceramics than her textiles has contributed some amusing patterns which include the same gay little figures which she models so cleverly. Her appreciation for fine fabrics is so vital that it justifies her inclusion here, for she believes that a room without fabrics is almost like a garden without flowers. That thought might well lead to the designing of important fabrics.

In Sweden as in Holland it is the peasant art which has developed most appealingly. Through belief in guilds they have built up a remarkable native industry and have designed textiles for their churches which would be noteworthy in any collection. In England where hand-blocked linen has long been one of their leading products they are gradually incorporating new designs, though traditional patterns are still leading. In the field of textured fabrics some of the smartest and most vital combinations are essentially English in conception.

In America one of the foremost advocates of the new art has been Paul Frankl. His sky-scraper furniture pleased some and horrified many when it was all too new for them to understand. With it he combined most interesting fabrics but very few over which he himself had labored. Those new and charming textiles being made at that time in Europe fitted so perfectly into his schemes that he found no necessity for designing others. Ruth Reeves stands out among American textile designers and she has done many excellent designs though their lasting powers have not yet been put to a very lengthy test. Bakst suggested that the designers in America look back to some of the Indian patterns for inspiration and that is exactly what Weinold Reiss has done. His completed schemes still smack of the Viennese—he is an Austrian—but his combination of American Indian motifs with Oriental colors is stimulating.

All contemporary design has for the most part followed the same principle for at its root has been the thought of

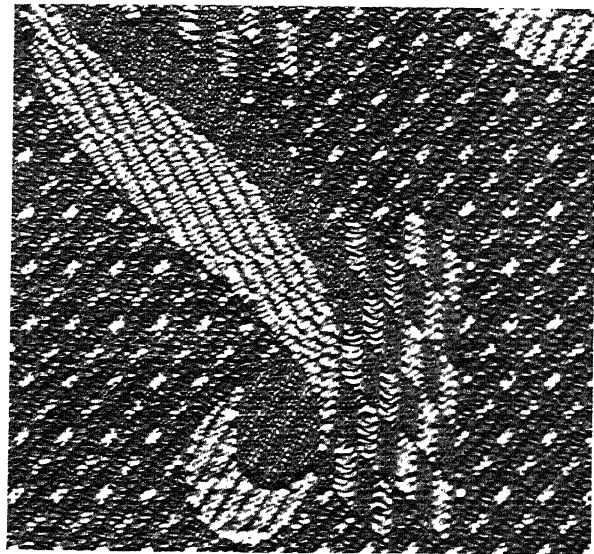
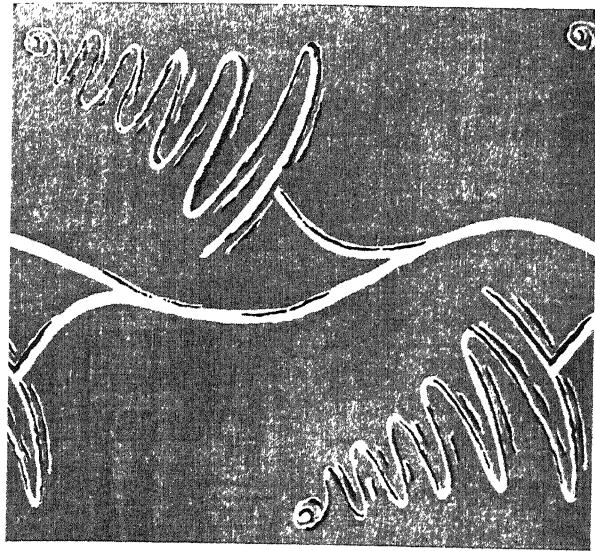
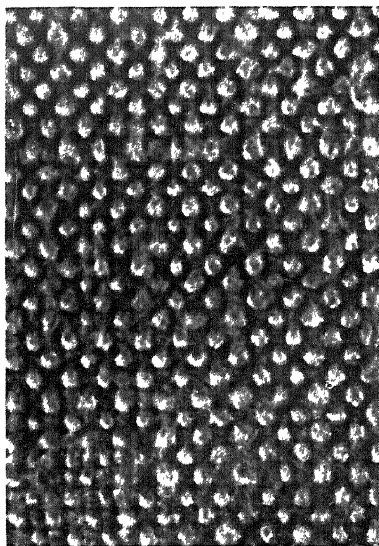


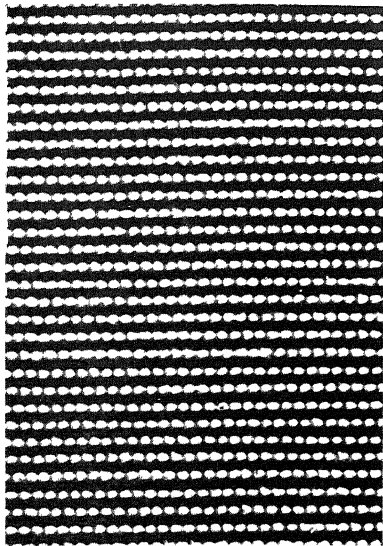
PLATE 39. *Left.* A wool upholstery fabric showing texture and pattern indicative of good contemporary design.



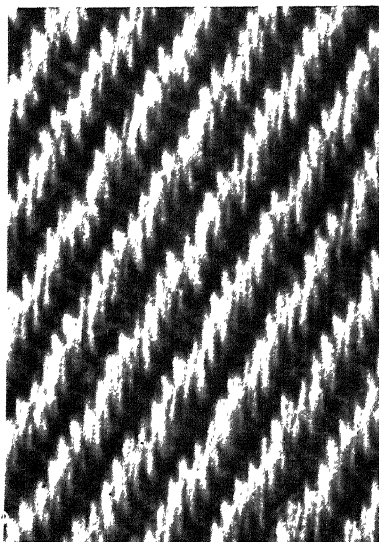
Right. A contemporary hand-blocked linen showing a Persian influence. Designed by Dan Cooper.



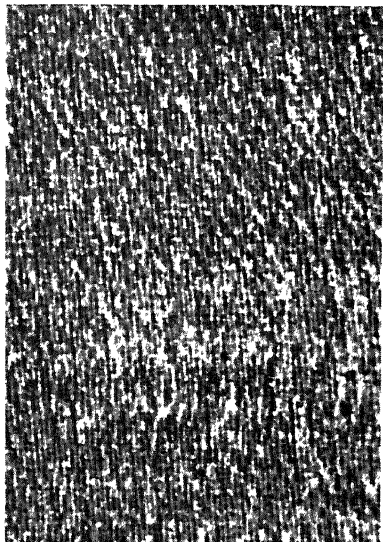
A.



B.



C.



D.

PLATE 40. A. Plain weave in linen. B. Rep weave in silk. C. Twill weave in wool. D. Satin weave in rayon.

elimination and simplification. There has been a definite trend toward horizontal movement and at the same time a definite repose in the newer patterns and a consistency which makes for stability. But the design is only one third of any contemporary textile for the weave and color are equally important. Texture has become almost a by-word for modernism, as it is certainly more important than it has been for many years. The word does not necessarily imply an uneven and rough surface as some people believe, but it does mean a definite recognition of the texture, whether it is soft and thick, shiny and flat, or dull and rough.

By this emphasis on texture new beauty has been given to old and familiar fabrics. Satins have reached a smartness that they have not recently enjoyed whether they are brilliantly shiny or so rough and dull that the satin weave is almost obscured. Taffeta has proven its adaptability when made with the new fibres and even chiffon has a fresh appeal. Velvets are so different and so amazing that it is all but impossible to identify some of them as pile fabrics. They can be made water-proof and wrinkle-proof, they can be made almost as sheer as chiffon, and the new plush with its luxurious deep pile definitely belongs among the modern textured fabrics. Cottons have a new place in the sun—not only with printed designs that are contemporary in character, but there are new weaves that are interesting just in themselves. There are new ways of printing, too, with screens and camera almost as one might reproduce a picture, and the air-brush is handled as easily as an old-fashioned paint brush. Lace has taken on fresh aspects for it can now be used for upholstery, or it can be water-proofed to make a shower curtain. Embroidery is climbing the fashion ladder and developing texture in stitchery. It has found a place on organdy, on plain chintz, on taffeta, on wool, or even all-over machine embroidery makes a smart and serviceable cover for sofa or chairs. And not satisfied with this perfection of weave and

patterns all these textiles must be made fast to light, some of them safe for laundering, some must be pre-shrunk, and some must be made flame-proof. There seems no end to what is demanded of these contemporary fibres and fabrics.

There are even some brand-new textiles that have come into existence because of the new fibres, and of these rayon is of course the one that commands the most interest. Its creation is a romance in itself. Some fifty years ago in the south of France where silkworms have flourished for several hundred years an epidemic cut deeply into the silk supply. A chemist named Chardonnet, having studied the silkworm's methods of taking cellulose from the mulberry leaves, decided that it would be possible for man to take this same cellulose and liquefy it and spin out a silk filament even as the silkworm did. He worked long and hard over his experiment and finally did achieve a filament—but it was not silk, it was a cellulose fibre. That is why this remarkable man-made fibre which has now achieved such rightly earned importance got off to such a bad start, and was first called artificial silk. But fortunately such progress has been made with this synthetic fibre that it no longer has to lean on anything else, but it is now being used for what it is—not for what it does or does not resemble. This artificial fibre has developed great flexibility and the resultant textiles can be made sheer or heavy, soft and delicate, or rough and rugged, even dull or shiny. It is one of the most important textile fibres of the present day and we have not yet plumbed the depths of its possibilities.

Back in 1883 and 1884 patents were granted for the production of yarn from a nitro-cellulose solution to Sir Joseph W. Swan in England and to Count Hilaire de Chardonnet in France. Sir Joseph's chief interest was in making a new filament for electric lights, but Chardonnet was seeking a new textile fibre. Somewhat later both the French and the

Germans worked over the cuprammonium process which is now used to produce a yarn known in this country as Bemberg. Viscose yarn was developed in both France and England and its introduction at the Paris Exhibition of 1900 stimulated interest in its manufacture here in America. But even after the manufacture of fabrics was begun practically all of the yarn was imported until the year 1909 when the American Viscose Company established their factory. The cellulose acetate rayon, the latest addition to this group, was an after-war product. The Doctors Dreyfus from Switzerland took over an English plant after the war which had been created for the manufacture of acetate lacquer for use on air-plane wings. From this left-over product they concocted the yarn which they styled "Celanese." In 1924 at a meeting of a group of interested manufacturers the word "rayon" was decided upon as the official name for this synthetic fibre. That definition lifted from it the stigma of artificial silk. Therefore rayon is not a specific fabric but a yarn from which a wide variety of textiles can be made.

America is now the largest producer of rayon with Japan second, though in one factory in Coventry in England about 20% of the entire world output is made. Of this grand total 87.5% is viscose rayon, 9.7% acetate rayon and 2.8% cuprammonium and nitro-cellulose. There are three major processes of producing rayon which are described in detail in Chapter XXV, all resulting in a fine filament spun from a liquid mixture of chemicals and cellulose which is chiefly wood chips and cotton linters. These long filaments laid parallel in a group and spun together produce a yarn not unlike silk, though lacking its resiliency. *Spun rayon* which is occupying the public eye at the moment is made by the same chemical process but is quite different physically. The long filament is chopped up and then spun together as is cotton or wool resulting in a yarn which is softer

and bulkier than plain rayon. It has a subdued lustre that can be controlled and it combines pleasantly with other natural fibres.

Coming from the same cellulose base is another material which has recently been woven into a textile—*cellophane*. Instead of being spun out into a filament the liquid mix is poured out into sheets and these later sliced into tiny strips which have no more weight nor size than yarn. Combined with cotton the resultant cellophane fabrics are of particular interest where their cool frosty look adds to the sense of comfort. They cannot be laundered, of course, though water does not affect them and they do shed the dust and are readily cleansed. The sparkle of the cellophane lends a definite textural interest.

Though color is one of the important considerations in all contemporary fabrics there is no such limitation as we have found in other eras. Or perhaps we are just too close to this one to see just what the outstanding hues are. One evident point is that the colors are all clearer and less muddy than was the prevailing note during the late nineteenth century. Greens and blues have been in high favor, and of late all the tones of brown and of course the famous off-whites. Pastels are in vogue to a certain extent but perhaps never before has there been an age when color was selected as carefully to suit the textile and the pattern, the whole of course carefully scaled in design and color to its function.

Probably down through the ages each era has seemed the most important and perhaps the most romantic to those who were working with the textiles, but with all the man-made possibilities of new fibres, new dyes made synthetically, new machines to create new textures, this seems to be surpassing them all. It will be interesting to see what the perspective of years adds to this startling and romantic age in which we are now living.

A Glossary of Weaving

ARMURE.—A kind of cloth with a raised pattern of satin weave on a rep or twill background. The pattern is made of warp threads floated on the surface and is not reversible. Small and delicate designs are used so that the floats are not too long for serviceability. Usually made on a Jacquard loom with warp and weft of the same color though cheaper ones are vat-dyed. It may be made of cotton, silk, rayon or a mixture.

The name is derived from the French word *armure*, suggesting that like armor it is linked together.

BASKET-CLOTH.—A kind of cloth of plain weave using two or more threads for both warp and weft. The construction is loose, there is no pattern, and it is the same on both sides. It is usually made of heavy cotton, though the same weave is employed for all fibres. Monk's cloth is a good example.

Originally any cloth woven in imitation of baskets.

BAST.—Fibres such as flax, hemp, jute and ramie. Sometimes the name is limited to the fibrous inner bark of certain trees which can be converted into tough but usable fibres. The linen that is called Chinese grass-cloth is a good example of the modern use of bast.

The Latin name for bast was *liber*, from which is derived the Latin word for book, as bast was used to write on in olden times.

BATIK.—A method of printing by means of resist-dyeing. The art has been perfected in Java though undoubtedly it was introduced there by sailors from Ceylon about 400. The same methods have been followed throughout the centuries. The design is drawn in on both sides of the cloth and all parts that are not to be dyed the first

color are covered with hot wax which after permeating the cloth resists the dye. Where the wax cracks and allows a bit of the dye to penetrate a spider-web, crackle effect is left on the background. After dyeing, the wax is removed in boiling water and used again to cover the parts not to be dyed the second color, and so on. Instead of employing stamps or brushes for the application of the hot wax the Javanese use a bamboo pipe with a little metal bowl on the end.

The very distinctive Javanese patterns are some of them beautifully symmetrical and truly Oriental in character. Batiks are also made on the other islands of the Dutch East Indies but none of them have the charm and artistic conceptions of the Javanese. The natives use them for their picturesque garments, though unfortunately the modern generation just as soon have the gay-colored prints from Manchester, England, so the art is gradually losing its importance. The cloth is usually cotton, though silks may be used and are when the same method is followed in America. Due to the fineness of their cotton and the years of beating on smooth stones while being washed, the old batiks have a texture like silk. The best and most used colors for the Javanese batiks are blue, brown, amber or yellow, and black.

The word is Javanese and means wax-painting.

BATISTE.—A kind of sheer cloth of plain weave which originated in France. It may be made of linen or cotton and is left white or piece-dyed.

The origin of the name may be from *bastas*, an Indian cotton material, though more likely it was named for its inventor Jean Baptiste Chambray, whose last name is identified with a popular cotton cloth of slightly heavier texture.

BAUDEKIN (or BALDACHIN).—A kind of rich-looking cloth, usually made with a warp of gold thread and a weft of vari-colored silk. The ancient ones were sometimes brocaded and often further enriched with embroidery and even studded with precious jewels. Introduced into Europe by the Crusaders as the *drap imperial* they were highly prized from the twelfth to the sixteenth century.

Originally utilized in the east as canopies over heads of state on ceremonial occasions, both Byzantine and Mohammedan rulers also hung them behind thrones or used them for kingly palls. After they had been copied by some of the European weavers they were even made into garments for nobility. It is now a general term for all rich-looking materials over-shot with gold.

The earliest and finest ones were made in Bagdad, or Baldack as it was called in ancient times. Hence the derivation of the Italian name for the city, Baldacco, and the word for the cloths, *Baldachins*. The Old French word *Baudekin* is from the same source. The draped *baldachin* was later replaced in the churches by the permanent *baldacchino* of carved wood. But it should be noted that all the finest *baldacchinos*, even including the elaborate one in St. Peter's in Rome, are carved to resemble the ancient draperies.

BENGALINE.—A kind of corded fabric heavier than poplin. It may be made of silk and wool or silk and cotton, or rayon may be substituted for silk.

BHADANA (or BANDHANA).—A method of printing or dyeing by means of tie-and-dye. Originating in India, kerchiefs for the head or neck were made of thin silk patterned with various colors. Tiny knots were tied in the fabric with threads at specified intervals according to the pattern that had been sketched in, and the knots were then dipped in dyes of various colors. As the dye could not penetrate the cloth where the thread bound it too tightly it left a white ring surrounding a small spot of color. The name later degenerated to mean any kerchief, particularly cotton, with a gay pattern similar to the old ones. From this developed our modern word *bandanna*.

The old Hindu word *bandhu* or *bandh* referred to a cord or tie.

BLEACHING.—The process of whitening textile fibres and fabrics as the first essential for dyeing. It was the ancient practise to spread the linen on the grass after the application of certain chemicals and let Nature do the rest. Six to eight months were required if the weather was unfavorable. As yet no chemical process has been discovered which can equal natural methods, but very few manufacturers want to wait that long and chemical bleaches are now very

satisfactory. Cotton and wool are more easily bleached than linen.

The word comes from the Anglo-Saxon *blæcon*—to become pale.

BOMBAZINE.—A kind of light weight cloth of plain or twilled weave with silk warp and worsted filler. It is now made only in black, as it is chiefly in demand for mourning. Several religious orders use it and it is the almost universal *mantilla* of South America. When first made in France and England in the eighteenth century various colors were used as well as black.

The name is derived from the Greek *bombyx* meaning silk.

BOURRETTE.—A kind of silk cloth with plain weave though roughish texture. It is made from spun silk, using the outside of the silk cocoons, which accounts for its knotty appearance as well as its lack of lustre. Bourrettes were made in Provence as early as the thirteenth century and were mentioned by Petrarch in his "Courts of Love." They are very soft and their mat surface is often a decorative asset.

The name is derived from the French word *bourre* which means burls or knots in cloth.

BROCADE.—A kind of weave and also the gorgeous silk material that has been called embroidery made on a loom. That is one means of identification for the pattern always looks as though embroidered on top of an already rich silk. The background may be taffeta, twill, satin or damask, usually of one color, or with a warp-stripe to contrast with the multi-colored floral pattern which is entirely separate from the weft of the background cloth. Woven on a Jacquard loom the colors that do not appear in this surface pattern are carried across the entire width of the back where they may be seen and counted. Because of mechanical limitations only six colors can be employed for this brocaded surface pattern. The old hand-made ones were not so limited, including many colors as well as many weaves. (See *BROCHÉ*.) The brocades were the most beautiful of ancient fabrics and originally all of them had gold or silver interwoven. The Persians probably learned the technique from the Chinese and the Europeans took it from the Persians.

The name comes from the Latin *broccus*, which means a kind of

stitching. The French *brocher* and *brocart* are from the same source and also the Spanish *brocado*.

BROCATELLE.—A rich silk fabric that is related to a damask in weave but to a brocade in effect, as the design always looks embossed and stands out in high relief from the background. The pattern which is usually large and definite is made in the satin weave against a twill background. Its distinction lies in that it has a linen back. It is not reversible though the pattern can be seen on the back. It is made with two sets of wefts, one for the face and the second of linen which only shows on the back. There are also two sets of warps, one for the face of the pattern and one that acts as a binder to hold the silken face to the linen back. In a true brocatelle the linen never shows on the face, but to create an antique effect it is sometimes brought to the surface to give a worn appearance. It is a heavy and very durable fabric seldom pliable enough to use for draperies. It is ordinarily of one color only, though sometimes the bold pattern is different from the background color. This fabric which originated in the thirteenth century was probably designed to imitate the beautifully tooled leathers which were so popular at that time. Gold or silver is never included as in brocades.

The name comes from *brocatel* and *brocatta*, referring to ancient patterned fabrics combined of wool and silk or cotton and wool.

BROCHÉ.—A type of cloth usually silk similar to brocades except that the fillers not in use are floated all the way across the back from selvage to selvage. Where this fabric is made by machine it is known as a swivel-broché and the floats are not carried all the way across the back, but just for the width of the small design. The swivels are small shuttles that carry the colors of the broché (embroidered) pattern. Like a brocade the pattern is quite separate from the background cloth. The word now generally refers to a light weight silk taffeta or satin with a small floral pattern that appears to be embroidered in at intervals. It is similar to the old Italian *brocart* where metal threads were also included and if floated were carried on the surface.

The name comes from the French word *brocher*—to stitch.

CALICO.—A kind of cloth of fine plain weave. A perfect example of the simplest weave it is one of the earliest cotton fabrics known. It can be put to any conceivable use and can be yarn-dyed, piece-dyed or printed with patterns. The ancient printed calicoes with their wonderful colors were made by hand with wood-blocks. (See **PRINTING.**)

The name is from Callicut, a great trading center of India, from where they were first exported.

CAMBRIC.—A kind of fine cloth, originally linen, now usually cotton. It is made with a plain weave and can be printed or dyed.

The name comes from the French town of Cambrai where the cloth was first made.

CAMLET (or CAMELOT).—A kind of closely woven antique material usually of camel's hair and silk. This material at times is confused with *camoca* which was all silk. Marco Polo mentioned beautiful white *camelots* or *camocas* made in China from fine wool and camel's hair which were exported to other countries.

This word is derived from the Arabic *khaml* which meant a kind of plush. (See **CAMOCA.**)

CAMOCA (or CAMAK).—A kind of fine silk fabric that was largely used from the fourteenth to the eighteenth century for church vestments and draperies for beds of state. They were made in Persia, India and China with symmetrical, geometrical patterns. As Europe was never able to copy them they were highly prized. Edward the Black Prince bequeathed his confessor "a large bed of red *camoca*."

(See **CAMLET.**)

CASEMENT CLOTH.—A kind of cloth of plain weave originally part wool and part silk. It is now a general term for all drapery fabrics of the class that are used for draw-curtains at casement windows. They may be all cotton, linen, mohair, silk, wool or rayon, or a combination of any two of those fibres. The colors are usually neutral.

CELLOPHANE.—A synthetic material compounded from cellulose as is rayon. Instead of being forced through a spinneret it is

poured out into flat sheets resulting in a transparent material of the thickness of paper. Cut into narrow strips it can be woven in combination with other fibres into a sheer fabric.

CENDAL (or SENDAL).—A kind of antique cloth very like a thin taffeta. The heaviest quality was used for banners for royal or ecclesiastical processions. One of the Canterbury Pilgrims was described by Chaucer as wearing a Persian print "lined with taffeta and with sendalle." Since the fifteenth century it has been called *Sarcenet*. (See.)

Derived from the Latin *sendal*, which in turn came from the Greek *sindon*, it meant a cloth of fine texture.

CHENILLE.—A kind of twisted velvet cord made on a loom. The cotton warp threads are strung in groups and the filler of cotton, wool, rayon or silk is a fluffy yarn which is firmly knotted to the warps. After the fabric is taken from the loom it is cut in lengthwise strips leaving an equal amount of filler on each side of the warp. This then twists itself into a velvet-like cord, the filler threads completely hiding the cotton warp.

The name is derived from the French word *chenille* for caterpillar which this fuzzy woven cord very much resembles.

CHINÉ SILK.—A kind of shadowy patterned silk wherein the warp is dyed according to the design before it is woven. The patterns are usually light and dainty and pastel in tone. This is related to the *ikat* silks of India where the warp is dyed before weaving and to the *patola* silks wherein both warp and weft are dyed before weaving. Cotton and linen handled in the same way make "shadow-printed cretonnes" or properly "warp-prints." (See.)

Despite the name indicating a Chinese source this process did not originate in China. The true French term for this silk is "Chiné à la branche."

CHINTZ.—A kind of fine cotton cloth with printed design. The term originated in the seventeenth century when painted and printed cottons were first exported from India to England. Chintz at that time was supposed to have a small spotty pattern, though now the name does not control the design. They have always been made of

fine calico or percale and practically all modern ones are calendered or glazed. Their chief charm is their fresh clear coloring and pleasant designs, usually floral. They may be printed by blocks, copper-plates, or rollers. Other ancient names were "chittes," "painted calicoes," "pintados," "toiles peintes," "perses" and "indiennes."

The name is derived from the Hindu word *chint* and that from the Sanskrit *chitra* which meant spotted or variegated. (See CRE-TONNE.)

CICLATOUN.—A kind of medieval silk fabric used for costumes or vestments. It was a thin glossy silk with gold interwoven somewhat like a *baudekin*.

CISELÉ.—A kind of velvet wherein the pattern is shown by the contrast of uncut loops with those that are cut.

Derived from the French word *ciseler*—to carve.

CLOTH OF GOLD.—A kind of superlative material that was much used in the fifteenth and sixteenth centuries as *drap d'or*. It has been known at least since the beginning of the Christian era when the Romans used it in great quantities. Pliny recorded that "gold may be spun or woven like wool, without any wool being mixed with it." Used extensively throughout the Near East it was imported to Europe by the Crusaders. It can be a plain weave of all gold thread, but was usually combined with silk to make a brocade or a patterned velvet. For narrow cloths of gold see COLOGNE BANDS. The earliest thread was made in Cyprus, and later in Sicily, Italy and Germany. It was ordinarily a silk or linen thread entwined with narrow strips of animal membrane which had been covered with a thin layer of gold leaf. In Saracenic Spain they used gilded parchment for the thread.

CLOTH OF TARSUS.—A fine silk fabric not made since the Middle Ages. It was much like *Camoca*, only richer in color for Chaucer clothed the "king of Inde" in a royal purple "Cloth of Tars couched with perles."

The name comes from Tarsus in southeastern Asia Minor where they specialized in making fine fabrics.

COLOGNE BANDS.—Narrow cloths of gold woven on small hand-

looms. Made to enrich church vestments they included various weaves and often silk embroidery as well. Though Lucca and Sienna specialized in making them they still carried the name of Cologne, where they originated. (See ORPHREY WEBS.)

CORDUROY.—A kind of cotton velvet corded or ribbed.

The original French name was *corde du roi*.

COTTON.—The most important vegetable fibre. It is a soft woolly fibrous material taken from the bolls of the cotton plant. The white or yellowish fibre varies from $2/3$ " up to over 2". The finest is Egyptian, though America with a medium length fibre is the greatest producer. India, Egypt and China rank next. A Manchester dictionary lists 243 kinds of cloth that can be made from this fibre.

The name comes from the French *coton* which was derived from the Arabic *katan* or *qutun* which really referred to flax. The generic word *Kapās* is commonly used in India today for cotton. The old Sanskrit word was *karpasi* and there is mention of "Karpas" in the Book of Esther.

CRETONNE.—A kind of heavy cotton cloth with a printed pattern. Unlike *chintz* it may have a canvas or ribbed weave and due to its density the printed design is seldom distinctly visible on the reverse side. It is practically never glazed and the patterns are usually larger and less detailed than those of *chintz*. Originally it was a strong white cloth of French manufacture, a good basis for the printed designs which were introduced about 1860.

The name came from the Normandy village of Creton which was once famous for the weaving of heavy drapery cloths. (See **CHINTZ**.)

CREWEL.—A kind of embroidery with a pattern of vari-colored wools worked on unbleached cotton or linen. The spreading pattern which covered only part of the ground usually included a vine or stem and various floral forms. Due to the varying length of the stitches and the careful blending of the yarns, handsome and decorative effects could be created. It was used extensively during the Jacobean era when the finest designs were made. During the nineteenth century the same type of work was known as "Berlin work."

The name comes from a North of England dialectic word meaning twisted wool.

DAMASK.—A kind of fine cloth with a flat woven pattern. In a true damask the pattern is a taffeta weave of weft threads and the background is satin made with the warps. Both warp and weft are usually the same weight, quality and color. The effect is flat, not embossed like a brocatelle and the pattern is reversible, though naturally the back has not the same lustrous beauty. One definition that may further help to identify it is to designate damask as a "flat figured satin." Unfortunately all patterned silks are at times called damasks but rightly the name should be applied to only the one weave. All modern damasks are made on a Jacquard loom, and large and formal patterns show the beauty of the weave better than small ones. The finest damasks are of pure silk though now the same weave and patterns are used for wool, linen, cotton or rayon. The fine linen double damasks for the table are the same on both sides.

The name is derived from the city of Damascus where the finest patterned silks were woven in the twelfth century. They were brought to Europe by the Crusaders along with the draw-loom on which they were made.

DENIM.—A kind of cloth, usually cotton, of a heavy and coarse twill weave. The warp is most often blue or brown with a white weft which is practically concealed. Occasionally small patterns are included.

The name is derived from its origin in France as *serges de Nîmes*.

DIAPER.—A kind of fine cloth with a small geometrical and almost inconspicuous pattern. Originally a costly patterned silk fabric from the Orient, usually white, it was used for ecclesiastical vestments. It is now linen or cotton with a simple woven all-over pattern, frequently diamond-shaped (table linen). The name is also used in reference to any geometric closely repeating pattern applicable to metal work, architecture, etc.

The linen cloth so patterned that was made in France in the

fifteenth century was known as *linge d'Ypres* from which derived *diaper*. (See DIASPER.)

DIASPER.—A medieval fabric which referred to a kind of weave wherein the glossy untwisted silk weft made a pattern against a dull, lustreless background. The figures were usually small and repeated horizontally—not unlike a diaper. Originally they were of one color only but later two and then gold added for decoration.

Their Italian name *diaspro* was derived from the Latin *jaspis* which referred to the practise of encrusting jewels (jasper) in metal work or textiles. The woven *diaspro* resembled this ancient jewel-encrustation. (See DIAPER.)

DRILLING.—A kind of heavy fabric of linen or cotton with a firm warp twill weave. It is ordinarily somewhat stiff and bleached ready for dyeing and is commercially known as “drill.”

The name is derived from the German *drillich*, three-threaded, because three threads are used in the weave, two always on the surface and one underneath.

DYEING.—The art of coloring fibres or textiles so that the color seems to be a property of the material and not superficial like paint. One of the earliest processes discovered for the ornamentation of fabricated objects, it was known in early Egypt and Assyria and there are references to the process in the Old Testament.

Dyes must be selected which have a marked physical or chemical affiliation with the fibres to be colored. Natural dyes only were used in antique times but today we depend equally on artificial dyes. Wool dyes most readily, then silk, and cotton is slowest of all. Before fibres or materials can be dyed they must be thoroughly cleansed and if the final colors are to be light in value the material must be bleached. The dye may be applied to the raw material, to the yarn, or to the woven cloth. The various ancient modes of dyeing to achieve pattern are noted under PRINTING.

The word comes from the Anglo-Saxon *dēag* meaning color or tint.

EMBROIDERY.—The art of ornamenting cloth with needlework.

It was known almost as soon as sewing, for it, too, was dependent on the needle. The varieties are due to the different stitches and to the different kinds and qualities of thread used. Patterns may cover the entire surface of the ground or may only follow a spreading design leaving the original cloth as part of the decoration. Known many centuries before Christ its history runs parallel with the development of design in textiles. The medieval embroideries for ecclesiastical vestments were works of art. In the sixteenth and seventeenth centuries embroideries were introduced into the home and they became the pastime for nimble-fingered ladies.

Of modern embroideries probably the works of the Japanese and Chinese are the most famous due to their carefully planned patterns, their intricate stitches and their superb blending of colors. Peasant embroideries from Europe are naïve in pattern and strong in color. Italian embroideries on fine table linen and Swiss embroidery on sheer linen are highly prized. *Petit point* and *gros point* for hand-bags or furniture are excellent examples of this art in modern France. Practically every country has some distinguishing characteristic in embroidery, if not in weaving. Wool and silk are more often used than cotton or linen.

The old French word *embroder* came from *bord*, the border which was sure to be decorated. See CREWEL—FLAME-STITCH—PETIT POINT.

FAILLE.—A kind of fabric where the weft is slightly heavier than the warp, thus producing a faint ribbed effect. It is most often a lustreless all-silk texture related to grosgrain, and has no pattern. Sometimes referred to as faille taffeta.

FERRONNERIE.—A kind of pattern woven in the lustrous velvets of the fifteenth and sixteenth centuries which has such slender tracery that it resembles the most delicate wrought iron work.

The French word means hand-wrought metal work.

FILLING.—The woof of a woven fabric. Also called filler, weft, tram.

FLAME-STITCH.—A kind of embroidery that completely covers a canvas ground. The stitches are always up and down, never across

the design. It can be made with wool or silk or mercerized cotton depending upon the fineness of the pattern and its use. The motifs are usually small with a frequent repeat, though in the seventeenth century there were some that were pictorial.

The same work is known as *Fiamma* or *Hungarian Work*.

FLAX.—Probably the most ancient fibre and still handled in much the same way it was in prehistoric times. The making of a usable thread from flax is undoubtedly the oldest step in the textile industry. The soft, silky fibre, 2' to 3' long, comes from the inside of the bark of the flax plant. (See **BAST.**) There are more than one hundred species of this plant, from the fibre of which can be made the sheerest linen, the most exquisite laces or the heaviest ropes.

Its Anglo-Saxon name was *fleax*. (See **LINEN.**)

FLOATS.—Warp or weft threads that are carried loose over the surface or back of the cloth without being fastened down or woven in.

FRIZÉ.—A kind of pile fabric with uncut loops. Most of the better ones are made with a double system of fillers to ensure durability—one for the backing and one for the loops. See **PILE FABRICS**. Patterns may be made by cutting some of the loops, by using different colors, or by different kinds or qualities of yarn. As this fabric is chiefly used for upholstery the better ones are wool, mohair or heavy cotton. (See **MOUQUETTE.**)

The name comes from the French word *friser*—to curl.

FUSTIAN.—A kind of coarse cloth with a short nap. Formerly it had a linen warp and a thick twilled cotton weft. It is now a stout twilled linen or cotton fabric such as corduroy or velveteen, and the nap is cut after the cloth is woven. (See **VELVETEEN.**) In the Middle Ages it was much softer though equally durable and the thirteenth century Cistercians all wore *fustian* chausables.

The name is derived from *Fustât*, the ancient name for Cairo, where they were first made.

GAUZE.—A kind of thin transparent fabric of the weave called *leno*. (See.) Silk gauze for decorative use may have a small pattern made by combining the leno weave with the plain weave. Formerly

made all of silk, it may now be cotton, linen, wool, rayon, or any mixture of fibres and can be dyed any color.

The French *gazi* was a very fine and peculiar weave which had originated in Gaza in Asia.

GROSGRAIN.—A kind of silk fabric with a heavy weft which produces a strong corded effect. It is usually soft and lustrous and should be distinguished from taffeta. It is the same on both sides, has no pattern and may be of any color.

HAIRCLOTH.—A kind of cloth combining cotton or linen warp with a weft of horse-hair. It is woven plain, striped or with small patterns so that the horse-hair, which is very durable, forms the wearing surface. It was formerly much used for upholstery and is being brought back into vogue for Victorian interiors.

HEMP.—A kind of fibre made from the tough inner bark of the plant of the same name. (See **BAST.**) It grows from 4' to 8' high and is related to flax. This fibre is used chiefly for cordage, though the finer qualities can be made the basis for certain coarse cloths.

JARDINIÈRE.—A kind of handsome silk velvet with a multi-colored pattern resembling a flower-garden. Against a light satin ground the pattern is achieved not only with many colors but with several heights of pile and the contrast of cut and uncut loops.

It was a special product of Genoa though the name is French.

JASPÉ.—A variation in weave which gives the effect of vertical streaks. Produced by uneven dyeing of the warp threads they usually vary slightly in tone from the background.

The term is derived from a similar effect in ceramics where the surface is clouded or veined in imitation of jasper.

JUTE.—A kind of fibre taken from the inner bark of an Indian plant that grows from 10' to 15' in height. It is strong and tough and as the cheapest fibre is used chiefly for canvas, carpet backs, etc. In combination with rayon it has been used for some very successful decorative fabrics of modern design.

Its derivation proves its antiquity for the Sanskrit word *jata* referred to a mat made from this fibre.

KALAMKAR.—A kind of printed cotton cloth from India, orig-

inally used as a bedcover. For their patterns and colors see Chapter V. The design was drawn in with a reed pen (in Persian a *kalam*) and the colors were afterwards filled in by hand. This distinguished them from the *palampores* which looked much the same but were printed with small blocks. (See PALAMPORE.)

The Persian name for these gay prints was *kalamkari*.

KASHMIR SHAWLS.—A splendid type of patterned shawl made from the finest goat's wool. They have long been famous for the technical perfection of the weaving, the fineness of the material and the beauty of design and coloring. A shawl of the finest quality and design is worth over a thousand dollars. They are woven on handlooms in small strips to conform to the size and form of the pattern. Others are embroidered in small sections of comparative size. They are then almost invisibly sewn together to complete a large and symmetrical pattern. The central cone or pine motif as well as the background was filled with small but perfect floral forms.

The finest ones have always been made in Kashmir.

K'ossu.—A kind of silk tapestry weave practised in China. The silk warp is so fine and the weft threads of vari-colored silks or gold so delicate that at times it is difficult to recognize the tapestry construction. The most elaborate patterns can be woven and the number and variety of the colors is unlimited.

LAMPAS.—A kind of cloth similar to a brocatelle in weave and to a damask in looks, except that it is vari-colored. Though it is made with two warps and two fillers like a brocatelle the pattern is not embossed. It is generally all silk and the ground color is different from the variegated pattern, which accounts for its sometimes being called a chintz damask. A *taffeta lampas* is fairly light weight, the vari-colored satin pattern woven against a plain taffeta background.

Formerly all Oriental silks with large designs in colors different from the background, even including *toiles peintes*, were known as *lampasse*.

LENO.—A kind of weave and also the thin material made in that way. The warp yarns are arranged in pairs and are twisted around

the weft threads to produce a lacy effect. (See GAUZE.) Leno, the cloth, is really a sheer muslin with this twisted weave introduced at intervals.

The name is a corruption of the French *linon* which came from the Latin *linum*, meaning flax.

LINEN.—A kind of cloth woven from flax. It is the oldest known textile and fine examples have been taken from the Egyptian tombs. (See Chapter I.) There are hundreds of varieties of linen cloth for it can be sheer or heavy, plain or patterned, piece-dyed, yarn-dyed or printed. It is extremely durable and has a wider range of uses than cotton. The word is also frequently used to mean flax yarn.

The Anglo-Saxon *līnen* came from the Latin *linum*—flax.

LOOMS.—A loom is a device by means of which a woven fabric is produced. Following the simple interlacing of grasses and reeds came the first *hand-loom*. The weaving of plain cloth on the most complicated modern looms follows the same principles established on that early loom where all the work was done by hand.

To weave plain cloth the warp threads are stretched taut the long way of the loom, vertically or horizontally, and usually wound around drums, one to hold the cloth as it is finished, one from which to unreel the warp threads. The warp threads are controlled by overhead *heddles* which are thin bars—originally of wood—threaded with strings or wires on the ends of which are loops through which the warp threads pass—one loop for each warp. They are arranged in frames so that by raising one heddle every other warp thread is lifted—for a plain weave. The second heddle controls the other alternate set of warps. As the heddle lifts the warp threads an opening is made between them and the ones that are still in place. This space through which the weft thread must pass is called a *shed*. For a simple weave an equal number of warps are then above and below. The filling (or weft) is then passed through in its shuttle. One throw of the shuttle, across or back, is called a *pick*. The warps that were on top are then lowered and the ones that were below are raised, thus creating a second shed which laces the weft into place. The weft is then passed back through this second shed

leaving an equal amount of warp and weft interlaced to form a smooth cloth. On the first looms all this was done by hand including beating the weft firmly into place with a kind of comb before continuing with a new shed.

The *foot-loom* came next when treadles were used to raise and lower the heddles and the hands were then free to pass the shuttle back and forth more rapidly. But if any variation was wanted that also had to be controlled by the hands. With the introduction of more than two heddles a pattern could be achieved, and an eight-heddle loom was an extremely complicated affair. This desire for pattern led to the *draw-loom*, which seemed a most progressive step.

That involved the use of a draw-boy who was precariously perched on top of the loom, and replacing the heddles drew up the warps by a series of cords. This "dobby-boy" could handle hundreds of threads but as he was not always accurate that led to many mistakes in the pattern. But with all its faults the draw-loom was used up to 1604. Then various inventions were made which started the loom on its way to the more than human machine it is today. In 1733 Kay found a mechanical way to throw the shuttle (and the shuttle itself was a great improvement on the bobbin that held the thread), and in 1784 Cartwright produced his power-loom.

But the greatest contribution perhaps was that of Jacquard, who perfected a device already worked out by clever mechanics of the preceding century. His apparatus includes a progressive series of cards with holes punched in them that represent the pattern. A design to be woven on a Jacquard loom is drawn off on squared-off paper with a square for each warp and each pick. It is then easy to see just which sections should be which colors and which weaves. The cards are then made to correspond and the holes come in contact with hooks that control the lifting and depressing of the warp-threads. If it is a short repeat there are not so many cards, but when you see a modern loom of shining metal weaving a brocade or a brocatelle with a big pattern and a long repeat the complex features of the weaving are almost beyond comprehension.

A loom can handle two series of warps and two series of wefts,

it lifts the heddles to form the sheds, it throws the shuttle across and back, it beats the weft tightly and smoothly into place, it winds up the finished cloth and it manipulates the boxes with the various colors of wefts, seeing that the correct one is inserted where needed in the pattern. But with all its mechanical perfections the process is not so different from that invented thousands of years before the Christian era. (See WEAVING.)

MADRAS.—A kind of thin cotton fabric made with leno weave and interwoven pattern. The long floats between figures are later sheared away.

Modern ones are also made of rayon.

MANCHESTER COTTONS.—A kind of coarse woolen cloth made in the seventeenth century with a pattern imitative of Indian chintzes. Later it was always colored green and was frequently called *Kendal* after the old cloth-making town of that name.

MARQUINETTE.—A kind of sheer cotton cloth that is made with a leno weave. The fine cotton thread of which it is made is usually hard-twisted for greater serviceability as it is for the most part used for glass curtains. It may also be made of rayon or silk, or a combination. If yarn-dyed a changeable effect is sometimes achieved. They are usually neutral or pastel in color.

MEZZARI (or MESARI).—A kind of decorative cotton print originally designed for a head-shawl and copied from Indian palampores. About 6' to 8' square they came into popularity in the late eighteenth century in northern Italy. They were printed with wooden blocks on fine cotton in gay clear colors. Made near Genoa they were also called *toiles de Gênes*.

MOHAIR.—A kind of fibre made from the long silky fleece of the Angora goat. The fibre is usually from 7" to 8" long and very fine and lustrous. The best quality is used to make the so-called camel's-hair cloths. Alpaca and cashmere are also made from the better grades of mohair. It is also used to make (1) a heavy upholstery cloth with pile cut in pattern, or uncut as frizé, which is very durable, (2) a light weight drapery fabric which can be printed

with chintz patterns, or a sheer fabric occasionally with interwoven stripes or small patterns suitable for casements.

The old French *mohaire* came from the Arabian *mukhayyar* which meant fabrics of goat's hair.

MOIRÉ.—A kind of fabric which looks water-marked. It is woven as a rep and the marks pressed in with engraved rollers. Formerly the silk rep was run between rollers, one of which was wrapped in an uneven way with canvas and cord. The pattern is not necessarily permanent and cleaning and pressing tends to remove it. It was formerly all silk but modern ones made of rayon hold the marks better than silk. It is thought that the idea originated from the marks left on the bales of silk rep tightly bound with ropes for a long caravan journey. After subjection to all kinds of weather it is not strange that the silks showed the marks of the ropes and perhaps water marks as well.

MOREEN (or MORINE).—A kind of plain fabric with a coarse warp and a fine weft which produces a lengthwise ribbed appearance. It is usually cotton though old ones were frequently mohair or wool and water-marked.

It is derived from the French *moiré*.

MOUQUETTE (or MOQUETTE).—A kind of pile fabric similar to frizé. With small set patterns of one color or several it is woven on a Jacquard loom. As its chief use is for furniture covering the most successful fibres are mohair, wool and heavy cotton.

MUSLIN.—A kind of soft cotton fabric of plain weave. It is less compact than calico, but it, too, can be bleached, dyed, or printed.

The name comes from the French *mousseline*, which was derived from the town of Mosul in Mesopotamia, which though long famous for its cloths of gold never specialized in fine cottons.

NET.—A kind of open-work fabric achieved in various ways. It may be twisted, hand-knotted or woven. The intersections of warp and weft however fastened together form a regular open mesh. The making of fine net, which is really a kind of lace, is a very ancient art. It can be made of linen, cotton, silk, rayon or hemp

and includes *bobbinet*, a fine mesh; *cable net*, a coarser mesh; *flet net*, a square mesh knotted at the corners.

The name is not connected with knit, but is the Anglo-Saxon *net*.

ORGANDY.—A kind of sheer transparent cotton fabric with a crisp finish, that of the Swiss organdy being guaranteed permanent. It can be patterned in self-color or white, and embroidered.

The French word also refers to book-muslin.

ORPHREY WEBS.—Narrow bands woven and embroidered for the enrichment of ecclesiastical robes. Made of cloth of gold they carried figures of Christ, the Virgin or various saints, an inscription in Latin and whatever floral or symbolic devices were needed to complete the pattern. Different colors and different techniques in the weaving indicated the place of manufacture, those from Venice being gold on crimson, the Florentine ones employing white silk in the faces of the figures, etc. The general term was *Cologne Bands* (See), though they were made in all parts of Europe.

The word developed through Old French from the Latin *aurum Phrygium*, meaning Phrygian gold.

PALAMPORE.—A kind of printed cotton cloth originally designed for a bedcover. The old ones, excellent examples of Indian art, were printed with many small blocks on a fine calico, the pattern skillfully arranged to cover most of the surface. (See Chapter V.) About 8' to 9' wide by 12' high they can be used as curtains, wall-hangings or bedcovers. The name which is not used in India probably came from Palampur in the Bombay district where it is possible that they may have been first made, though they are usually identified with Madras. (See KALAMKAR.)

PETIT POINT.—A kind of embroidery with small stitches that completely cover the background which is coarse linen or canvas. The stitch, also called a tent-stitch, when larger and made of heavier wool is called *gros point*. This embroidery may be made of wool, silk or cotton, depending on the pattern and its use. It was probably originated to take the place of tapestries and was a favorite eighteenth century covering for chairs and sofas. Frequently in both France and England they were made with pictorial subjects similar to those

for tapestries. The same stitch is used today for many peasant embroideries and for simple decorations on costumes or table linen.

PILE FABRICS.—Any fabric having a surface of upright ends, as in fur, and a plain back. The surface may be looped as in *frizé* and *terry*, cut short as in *velvet* and *velveteen*, long as in *plush*, or in combination with other weaves as in *velours de Gêne*, or cut and uncut as in *ciselé*. The pile may be achieved by an extra set of either warp or filler threads, depending on the weave and the fibre. Pile fabrics were originated some centuries B.C. to look like the furry coats of animals and they have been and can be made of any fibre. (See varieties noted above.)

PINTADO.—A kind of painted or printed cotton. The name was given by the Portuguese to the East Indian chintzes, particularly those from Callicut and it is not in general usage.

The word is derived from the same source as pinto—that is pied or spotted.

PLUSH.—A kind of fabric with a long pile related to velvet. Made like velvet the pile is more than $\frac{1}{8}$ " long and is usually pressed down to form a pattern which resembles fur. It may be made of silk, wool, cotton, rayon or any combination, and the surface color need not be the same as the back.

The name comes from the French *pluche*, which originally derived from the Latin *pilus* for hair.

PONGEE.—A kind of fabric of plain weave made from wild silk. Though it is one of the oldest Chinese silks most of it now comes from the province of Shantung. Its softness, unbleached color and durability in laundering have made it very popular.

Imitations are made of cotton or spun silk and rayon.

POPLIN.—A kind of fabric similar to a light weight rep. It is made with a heavy weft which produces a light corded effect running across the fabric. Made of cotton, silk, wool, rayon, or a combination of fibres, it is used for dress goods and for light hangings.

The French name was *popeline* for a fabric made in Avignon and so named because of the Pope's residence there. However, no one knows exactly what that ancient fabric was.

PRINTING.—A method of patterning a cloth by means of dyes. The earliest known designs were painted or printed and antedated woven patterns by many centuries. All of the four methods listed below were known and practised in ancient days.

(1) *Direct* printing deposits the selected colors directly on the cloth. This can be done in various ways, but the most ancient was

(a) painting the dye on with a brush or pen. As true dye and not paint was used this can be called the earliest method of dyeing or printing.

(b) *Block*-printing created a pattern by means of a series of wooden blocks cut in relief from $\frac{1}{8}$ " to $\frac{1}{2}$ " in depth. Very fine lines were made by using brass strips which had more strength than an equally thin strip of wood. The pattern was outlined by "pitch pins" which indicated where the next block was to be set down. The blocks were dipped in the dye, set on the cloth, and hit with a maul to insure an even printing. Each color had to be thoroughly dried before the next one was applied, though there was no limit to the number of colors that could be used.

(c) *Perrotine block*-printing, invented in the early nineteenth century, permitted using the second and third colors while the first was still wet. This was limited to small designs and three colors.

(d) *Copper-plate* printing was a mid-eighteenth century invention. The decorative designs were engraved in intaglio on copper plates which were then applied to the cloth.

(e) *Copper-rollers* were a late eighteenth century invention and at first carried only the outline of the design. Later the whole pattern was engraved on a series of rollers, each printing its own color, as it turned in a dye-bath before it came in contact with the cloth. That is the process followed today though now the rollers are etched, not engraved. Modern printed cottons are usually run over hot rollers and then subjected to a steam bath to set the colors.

(f) *Tye-and-dye* was a method of printing a design by hand. Small portions of the cloth were tied with thread and then dipped in dyes to complete a softly blended and colorful pattern.

(2) *Discharge dyeing* is another ancient method of acquiring a

pattern. The cloth is dyed the required color and then certain acids and alkalis are applied according to pattern and they eat away or bleach out the color.

(3) *Mordant dyeing* is also an ancient art that seemed miraculous for certain colorless chemicals were applied to plain cloth according to pattern, and when the cloth was put in a dye-bath it came out patterned with various colors, due to the chemical reactions.

(4) *Resist dyeing* is also very old and is still practised in the same way. All of the cloth except the parts to be patterned by a certain color are covered with a wax or clay. In the dye-bath this resists the color and only the pattern is colored. In turn that pattern is covered with wax and other portions exposed for another color and so on. (See BATIK.)

But with all the modern mechanical improvements the same ancient methods are still pursued. Resist printing has never been changed and the cloths so printed are used extensively. Modern cottons and linens printed by hand with wood-blocks are prized more highly than the best ones printed by machine. The oldest and the newest methods are carried on simultaneously.

RAYON.—A synthetic yarn from which fabrics of various weaves and textures can be produced. (See Chapter XXIV.) There are three major processes of producing rayon, each with its own advantages. They are all alike in that chemicals are used to reduce cellulose (wood chips and cotton linters chiefly) to a solution from which the yarn, or rather filament, is spun.

(1) *Viscose rayon* is compounded from a pure cellulose base using spruce wood and cotton. They are reduced to a pulp similar to that prepared for paper and sent to the rayon mills in large sheets resembling blotters. In the viscose factory the pulp is steeped in a liquid caustic soda solution and then squeezed dry to a pulp known as alkali cellulose. This mass after being crumbled up so that it resembles damp white sawdust has to be aged for a definite length of time at certain temperatures and the necessary degree of humidity. After mixing with a specified quantity of disulphide of carbon an orange crumb results. This soluble plastic is then mixed with water

and more of the same chemicals until the result called 'viscose' resembles strained honey.

The real miracle of this industry is the spinning of this liquid into a filament which has both strength and beauty. The viscose is forced through a spinneret, a small metal disc about the size of a dime in which are many minute holes, which is immersed in an acid bath. The filaments formed from the viscose in the acid are twisted together to form a thread which has then to be washed, have the sulphur removed, and wound into skeins or spools ready to be shipped to the weaving mills.

(2) *Cellulose acetate* is really a different substance up to the point of spinning for it is made from cotton linters and an acid named acetic anhydride. The cotton linters are scrubbed and bleached to a fluffy mass of pure cellulose before being combined with the acid in a powerful mixer. After further chemical and water dilution the viscose mass is ripened until it becomes cellulose acetate. When later poured into a large vat of water the cellulose acetate precipitates as pure white flakes, which are further purified and then dried until the flakes fall like snow out of the dryers and can be pressed into blocks.

When ready for manufacture these white flakes are mixed with a clear white pungent fluid known as acetone and the resultant mass is as thick as molasses though clear and practically colorless. After further filtering and mixing the solution is ready for spinning. The spinneret used for this type of rayon resembles a shower-bath nozzle, and as the fluid leaves the minute holes it flows downward into a shaft into which warm air of specific temperature and definite humidity is constantly rising. The acetone evaporates leaving each stream a solid filament before it reaches the bottom of the shaft where the filaments are gathered together into a thread.

(3) *Cuprammonium*, making the so-called Bernberg yarn, is made from cotton linters subjected to a caustic soda bath and bleaching until the result is almost one hundred per cent pure alpha cellulose. After being mixed with copper sulphate and ammonia aqua the resultant viscous fluid is filtered again and thinned to the proper

content. The spinneret through which it is forced has slightly larger holes than those used for the other two processes, and the solution on leaving the spinneret passes into de-aerated water of constant temperature. The filaments are "stretched" on the way through and slowly solidified, the water extracting most of the ammonia and part of the copper. The filaments then pass through a bath of mild sulphuric acid and are wound into skeins which are later sprinkled with water to remove any remaining traces of the acid or the copper sulphate. The final process includes two soap baths and thorough drying before the thread is ready for winding.

REP (or REPP or REPS).—A kind of fabric of plain weave with a corded surface. A *warp rep* is made with heavy weft threads, or by running two or more wefts through one shed, and with fine warp threads which produces a ribbed effect across the material. A *weft rep* can be made by using coarse warps and fine wefts which produces a vertical ribbing. They are unpatterned and reversible and can be made of cotton, wool, silk or rayon. (See POPLIN.)

The name is probably a corruption of *rib*.

SAMIT (or EXAMITUM).—A rich silk fabric of the Middle Ages interwoven with gold. Chaucer tells of one costume of "Samette with birds wrought and with gold beaten full" which was probably of Sicilian or Lucchese weave. Its special identification was its six-threaded silk warp. Later the name was applied to any lustrous silk.

From the Old French *samit* derived from the Latin *examitum*. It originated with the Greek *hexamiton*—six threads.

SARSENET (or SARCENET).—An antique fabric of plain silk weave. It was thin and soft like *cedal*, and was used in Persia and Byzantium and also by the Saracens for head-dresses.

The name comes from Saracen.

SATIN.—A kind of silk fabric with a glossy surface and a dull back, and also the weave by which it is achieved. The weave is complicated (see WEAVING) but permits practically all of the warp threads to be floated on the surface, so that it is smooth from top to bottom. It is primarily a silk weave, but cotton or linen wefts can be used and excellent modern ones are made of rayon. As a weave

it is used in combination with other weaves to produce damasks, brocatelles, etc. It has always been one of the richest fabrics though not extremely practical due to the length of the warp floats, even when the weft is durable.

The name probably came from Zaytun in China where it originated.

SATINE (or SATEEN).—A kind of fabric imitative of satin with a glossy surface and a dull back. *But* it is made with weft floats and is therefore smooth from side to side. As it is usually made of cotton, the better quality mercerized, it is very stout and is ordinarily piece-dyed.

SERGE.—A kind of fabric with a twill weave. Made of silk the Chinese used it in ancient days as a basis for their exquisite embroidery. As a worsted twill with its flat diagonal weave it is used for clothing. It is the same on both sides and has no pattern.

This French word meaning twill is derived from *Seres*—Chinese.

SILK.—The most beautiful fibre and one of the oldest. This delicate lustrous fibre is unreeled from cocoons made by silk worms. For a full explanation of silk and sericulture see Chapter III. Commercial silk is now made from the *bombyx mori*. *Floss silk* is a poor grade of yarn made from the outside of the cocoon. *Hard silk* is this outside fibre with the gum still in it, and *soft silk* is the same fibre with the gum soaked off. The best silk does not include any of these outside fibres. *Raw silk* is the fibre as it is first reeled into skeins before being treated in any way.

SPINNING.—The forming of a usable thread by drawing out and twisting various fibres. As this process precedes weaving it is one of the oldest activities known.

STRIÉ.—Narrow streaks, stripes or bands of practically the same color as the background. Usually interwoven like a warp stripe they give a faint two-toned impression to satin or taffeta.

TAFFETA.—A kind of fabric of plain weave with warp and weft of practically the same weight which produces a fine even texture. Originally only a silk weave it is now also made of cotton, rayon, wool or any mixture. Silk taffeta can be finished with a high gloss

and, often weighted with metallic salts, it has a rustling sound. It can also be finished without any lustre as the softest of silken textures. The weave should be distinguished from *faille* and *grosgrain*. An antique taffeta with a roughened surface is produced by using an uneven filling and a changeable taffeta by using different colored yarn for warp and filler. Taffeta is also a basic weave which can be combined with other weaves as in damasks, etc.

One of the earliest weaves it is mentioned in the *Arabian Nights*, the name coming from the Persian *taftan*—to spin.

TAPESTRY.—A kind of hand-woven textile wherein the weft is inserted by hand with bobbins or spindles instead of with a shuttle. The strong warps of linen or cotton are completely concealed by the heavy weft threads of wool or silk. For full details as to technique, patterns and colors see Chapter XVI.

TARTARIUMS.—A kind of ancient fabric in which vari-colored silks and cloth of gold were so skillfully combined that Boccaccio declared no painter could equal them.

They were so called because sold by the Tartars, though undoubtedly they were made in China.

TERRY.—A kind of fabric made like a true velvet but with loops left uncut. The loops are made by an extra set of warps passing over the wire which in this case does not cut them when it is withdrawn. It must be distinguished from *frizé* which is made with weft threads.

The name comes from the French verb *tirer*—to draw.

TRAM.—A kind of soft silk yarn without much twist which was used as filling. Hence its modern usage as another word for weft.

The original Latin *trama* meant weft.

TURKEY-WORK.—A kind of hand-weaving with a thick wool pile popular in the seventeenth century in England. Patterns and effect to look as much like an Oriental (Turkish) rug as possible.

TWILL.—A kind of weave and also the textile made in that way. Due to carrying the weft over one and under two warps, then sliding along to the left in the next row and repeating, a diagonal ribbed effect results. A herring-bone pattern is a variation of this weave,

which can also be made with squares or zig-zags. The weave does not follow the lines of either warp or weft. (See WEAVING.)

TYE-AND-DYE.—A method of printing by tying knots in the cloth according to design and dipping them in dye. If small bits of fine cloth are tied with a tight string the dye cannot penetrate and so leaves a ring of the original background color. Looser tying permits the dye to penetrate unevenly, giving a blurred effect and a soft merging of one color into another.

VELOURS.—A general term for any fabric resembling velvet, though more concisely the pile fabrics that lie in between a fine short-napped silk velvet and a shaggy plush. It is the French word for velvet and has been grossly misused by our many meanings attached to it.

VELVET.—A kind of silk fabric with a thick, short, cut pile on the surface and a plain back. A true velvet is woven with two series of warps, one united with the weft to form the back, and the second for the pile. The warp yarn that is to form the pile passes under the weft thread and up over a wire making a loop. There is a small knife at the end of the "pile wire" which cuts the loops as it is withdrawn. Some cheaper velvets and also very sheer chiffon velvets for costumes are sometimes woven as a double fabric, face to face, and the pile is made by slicing them apart with a knife which moves back and forth like a shuttle. The technique for making a cotton velvet is quite different. (See VELVETEEN.)

Velvets may be plain, striped or patterned. Some modern plain velvets are made to look antique by being so patterned that there is no pile in certain spots which then look worn. The fine Genoese velvets of the sixteenth and seventeenth centuries were also combined with a satin, damask or brocaded background, the velvet only being used for the pattern. See also CISELÉ, FERRONNERIE, and JARDINIÈRE. The Dutch velvets from Utrecht were widely known and that term seems to have been adopted as a commercial name to distinguish a heavy velvet of cotton or mohair from the finer all silk velvets of Italy. A true velvet is all silk, but they are also made with a silk face and a cotton back. Delightful modern velvets are made of

rayon, some of the newest for costumes being non-crushable, which conquers the only defect in any pile fabric. Mohair and wool and cotton are also used. (See PILE FABRICS.) There is no limit to the color possibilities. Velvet is also the general term for all warp pile fabrics except plush and terry. (See.)

VELVETEEN.—A kind of fabric often called cotton velvet. It is made like a heavy satine with the cotton weft threads floated loosely over the warp. The finished cloth is then unreeled so that those floated threads can be cut by hand, and after shearing the resultant fabric has a fine close pile. Cotton is the usual fibre though the word velveteen is used for all weft pile fabrics as distinguished from velvet, the warp pile fabrics. (See FUSTIAN.)

VOILE.—A kind of light weight fabric of plain weave. Due to the hard-twisted warp and weft the material is strong despite its semi-transparency. It is usually piece-dyed and can be made of cotton, silk, wool or rayon.

WARP.—The threads that run lengthwise of the fabric. Warp threads are apt to be of a better grade of yarn than the weft and are occasionally starched or sized, though the wefts never are.

WARP-PRINT.—A kind of printed fabric wherein the warp has been printed with the design before weaving, and the filling is plain. Usually of cotton and classed with cretonnes, they are also called shadow-prints.

WEAVING.—As weaving is generally believed to be the first handicraft that man acquired, it is obvious that its origin must have been very simple. The first thought developed was that of interweaving reeds and grasses. They were pliable and easy to handle and by interlacing them one over and one under, and the reverse, one under and one over, on the next row, a firm and usable material resulted.

Some time later linen and wool were discovered and woven in the same way. As soon as man had discovered how to spin these fibres into thread, it did not take long to invent a loom. (See LOOMS.) This process which the prehistoric people discovered is still in use today. Strong threads were stretched lengthwise, perhaps from the

horizontal limb of a tree and wound around a stick which lay on the ground. Or the *warp threads*, as those foundation threads are called, may have had individual weights which held them taut. The *weft threads* were those which were interwoven across the warps already set in place. A bobbin carried the weft in and out between the warps. When it had crossed the entire width of the loom from right to left the thread was drawn taut, pushed down into place and the thread sent back from left to right. The speeding up of this process by separating the warps so the thread could be passed through more rapidly is described under *LOOMS*. Such was simple weaving in prehistoric times and it has not changed fundamentally today. Weaving still remains an interlacing of threads set at right angles to each other in such a way that a solid textile results.

Damask, brocade, taffeta and satin are primarily silk weaves while twills and tapestries are wool weaves. Cotton is usually a plain or fancy weave and velvet is fundamentally a silk weave.

(1) Of the so-called *plain weaves* there are three general divisions:

(a) *Plain weave*—one over and one under, with both warp and weft of approximately the same weight and size, as in calico. When two or more weft threads are grouped together and pass over an equal number of warp threads it is called a basket-weave.

(b) *Rep*—one over and one under, but either warp or weft is heavy and the other fine which produces a corded effect.

Twill—over two and under one and moving along one space to the left each time in regular order produces a diagonal effect. This is sometimes made with a heavy warp or weft.

(c) *Satin*—this plain weave leaves as much warp on the surface as possible, skipping either four or seven wefts and repeating irregularly. Not less than five fillers and five warps (and sometimes eight) are required to complete this weave. For instance starting at the right the first warp thread goes under the first weft thread and floats over the next four. The second warp is carried on the surface down to the fourth weft to slide under that and then floated up over

the next one. The third warp goes to the second filler under that, and then up floated over the next three. The fourth warp skips over all the first four wefts and is caught under the fifth. And the last, the fifth warp thread floats over two, under the third weft and then up on the top for the next two. Skipping in this irregular way, though every warp is lifted and every weft caught in, there are no regular rows. If they followed an even succession the result would be a twill satin. The weft is hidden by the long floats of the warp but makes a solid foundation or backing for a fragile surface. The combinations of these three weaves produce most of the more familiar textiles, even including damasks and brocades.

(2) *Leno* or gauze weave is of a different character. Two warp threads are so twisted around the weft as to form a kind of knot. This produces an openwork fabric such as marquissette. There are many variations to this weave and it can be made with pattern, too.

(3) *Double cloths* look as though they were the products of two separate looms. They are usually made with two series of warps and one weft. The one series produces the back which may be of a different color and fibre while the second produces the face which may even include a pattern.

(4) *Pile fabrics* are still different for they are made with two series of weft or warp threads. In a velvet one set of warps combined with the weft produces the firm background while the second set bound in at regular intervals forms the pile. The loops, made over a wire, may or may not be cut depending on the style of the fabric being woven. When all are cut uniformly the textile is velvet and when all are left as loops it is frizé. There are various combinations of the two and also with other weaves.

With these few simple operations can be made all the fanciest fabrics known in the world. Various kinds and qualities of fibres, remarkable dyes and intricate looms are part of the necessary equipment, but the weaving itself is still a simple operation.

WEFT.—The threads carried by the shuttle through the warps from selvage to selvage. Also called woof—filler—tram—filling.

WOOL.—A very important fibre which is made from the fleece of a sheep. It was probably the first fibre to be spun and was known in prehistoric times. The fibre depends in length on the kind of sheep and the length of time the wool has grown and consequently varies from 1" to 18". As it is soft and silky and only slightly curly it is easily spun into thread, and is second in importance to cotton.

Bibliography

- ADALINE'S ART DICTIONARY.
ALGOND, HENRI, Grammaire des Arts de la Soie.
AMERICAN SILK JOURNAL, A Dictionary of Silk Terms.
ATHERTON, LOUIS, Tapestries of Four Hundred Years Ago.
ATWATER, MARY M., The Shuttle-Craft Book of American Hand-Weaving.
- BABELON, ERNEST, Manuel d'Archéologie Orientale.
BAINES, SIR EDWARD, History of Cotton Manufacture in Great Britain.
BAKER, GEORGE P., Calico Painting and Printing in the East Indies in the 17th and 18th Centuries.
BARKER, ALDRED F., Ornamentation and Textile Design.
— — The Study of Textile Design.
BIRDWOOD, GEORGE C. M., The Industrial Arts of India.
BOAS, FRANK, Primitive Art.
BOSTON MUSEUM OF FINE ARTS, Bulletins.
BUDD, J. W., Decorative Silks in America.
BUNT, CYRIL G. E., Studies in Peruvian Textiles.
BUSHELL, STEPHEN W., Chinese Art.
BUSHNELL, EDITH M., All Over Patterns in Printed Silks.
BUTTS, G. BASEDUN, C. P. Oberkampf of Jouy.
- CANDEE, HELEN CHURCHILL, Weaves and Draperies.
CATALOGO DE LA EXPOSICION DE LA TEJIDOS, Espanoles Anteriores a la Introduccion del Jacquard.
CATALOGO DE LA SECCION DE TEJIDOS, Bordados y Encajes del Musero de Arte Decorativo y Arqueologico—Barcelona.
CESCINSKY, HERBERT, From Gothic to Sheraton.
CHRISTIE, ARCHIBALD H., The Development of Ornament from Arabic Script.

- — Traditional Methods of Pattern Designing.
- Clouzot, HENRI, Histoire de la Manufacture de Jouy et de la Toile Imprimée en France.
- — Le Decor Moderne dans La Tenture et Le Tissu.
- — Painted and Printed Fabrics.
- CLUNY, MUSÉE DE, Etoffes Anciennes (du XV au XVIII).
- COLE, ALAN S., Descriptive Catalogue of a Collection of Tapestry-Woven and Embroidered Egyptian Textiles in the South Kensington Museum.
- — Ornament in European Silks.
- — Textile Ornamentation.
- Cox, RAYMOND, Des Soieries d'Art depuis les Origines jusqu'à Nos Jours.
- — Catalogue Sommaire des Collections du Musée Historique des Tissus.
- — Le Musée Historique des Tissus, Soiries et Broderies.
- COOMARASWAMY, ANANDA K., History of Indian and Indonesian Art.
- — The Arts and Crafts of India and Ceylon.
- CRAWFORD, M. D. C., Cotton—A Brief Narrative of a Great Fibre.
- — New Fabrics for Old Textures.
- — The Cotton of Ancient Peru.
- — The Heritage of Cotton.
- CROMPTON, REBECCA, Modern Design in Embroidery.
- DANA, JOHN COTTON, Persian Textiles.
- DAWSON, NAISMITH, French Fabrics.
- DENNY, GRACE, Fabrics.
- DILLAWAY, THEODORE M., Textile Designs.
- DIMAND, M. S., A Handbook of Mohammedan Decorative Arts.
- — Persian Velvets of the 16th Century.
- DOLMAN, FREDERICK, The Quaint and Grotesque in Cotton Designing.
- DYER, ELIZABETH, Textile Fabrics.
- ENCYCLOPEDIA AMERICANA.
- ENCYCLOPEDIA BRITANNICA.
- ERRARA, MME. ISABELLA, Broderies Anciennes (Musée de Bruxelles).
- — Etoffes Anciennes et Modernes (Musée de Bruxelles).
- EVANS, MARY, Costume Throughout the Ages.

- FAIRHOLT, F. W., A Dictionary of Terms in Art.
 VON FALKE, OTTO, Decorative Silks.
 FERGUSON, JOHN CALVIN, Handbook of Architecture.
 FISCHBACK, FREDERICK, Ornament of Textile Fabrics.
 FLEMMING, ERNEST, An Encyclopedia of Textiles.
 FRANKL, PAUL, Form and Reform.

GARDINER, HELEN, Art Through the Ages.
 GILROY, CLINTON G., The Art of Weaving by Hand and by Power.

- — The History of Silk, Cotton, Linen, Wool.
 GLASS, FREDERICK J., The Industrial Arts.
 GLAZIER, RICHARD, Historic Textile Fabrics.
 GOLDSMITH, ELIZABETH, Ancient Pagan Symbols.
 — — Sacred Symbols in Art.
 GOULD, MR. AND MRS. GLEN, Chintz in Retrospect.
 — — Design—The Chinese Chou.
 —Chinese Buddhist Emblems.
 —The Chinese Fuang-Huang.
 —The Chinese Taoist Emblems.
 —Cone and Palmette.
 —The Tree of Life.
 — — Period Furniture Handbook.
 — — What to Know about Tapestries.

GUIMBAUD, LOUIS, La Tapisserie de Haute Lisse et de Basse Lisse.

HADAWAY, W. S., Cotton Painting and Printing in the Madras Presidency.

HALSEY, R. T., and CORNELIUS, C. C., Fabrics of the American Wing (Metropolitan Museum of Art).

— — and ELIZABETH TOWER, The Homes of Our Ancestors.

D'HARCOURT, R. ET M., Les Tissus Indiens du Vieux Pérou.

HARMUTH, LOUIS, Dictionary of Textiles.

D'HENNEZEL, HENRI, Catalogue des Principales Pièces Exposées (Musée Historique des Tissus).

— — Claude Dagon.

— — Pour Comprendre les Tissus d'Art.

HEPPLEWHITE, A. & Co., The Cabinet-Maker's and Upholsterer's Guide.

HESS, KATHARINE P., Textile Fibers and Their Uses.

- HOLMES, WILLIAM H., *A Study of the Textile Art.*
HOLY BIBLE, THE.
HOOPER, LUTHER, *Silk, Its Production and Manufacture.*
HUNTER, GEORGE LELAND, *Damasks, Brocades and Velvets.*
——— *Decorative Textiles.*
——— *Practical Book of Tapestries.*
——— *Tapestries, Their Origin, History and Renaissance.*
HUNTON, W. GORDON, *English Decorative Textiles.*

- JONES, OWEN, *Examples of Chinese Ornament.*
——— *The Grammar of Ornament.*

KENDRICK, A. F., *Brief Guide to the Western Painted, Dyed and Printed Textiles (Victoria and Albert Museum).*

——— *Catalogue of the Early, Medieval Woven Fabrics in the South Kensington Museum.*

——— *Catalogue of the Muhammedan Textiles of the Medieval Period (Victoria and Albert Museum).*

——— *Catalogue of Textiles from Burying Grounds in Egypt (V & A). Vol. I, Graeco-Roman period; Vol. II, Period of Transition and of Christian Emblems; Vol. III Coptic Period.*

——— *Early Textiles from Damietta.*

——— *Italian Silks of the 14th Century.*

——— *More Textiles from Egyptian Cemeteries.*

——— *Sicilian Woven Fabrics of the 12th, 13th, and 14th Centuries.*

——— *The Textiles of Egypt.*

——— *Woven Fabrics from Egypt.*

LEE, ARTHUR H. AND SONS, *Period Guide to Fabrics in Relation to Furniture.*

LEHMAN, WALTER, *The Art of Old Peru.*

LENYGON, FRANCIS, *Decoration in England.*

LEWIS, ALBERT BUELL, *Block Prints from India for Textiles.*

LITTLE, FRANCES, *Early American Textiles.*

LONG, LOUIS, *Printed Cotton European Textiles.*

LOWRIE, WALTER, *Monuments of the Early Church.*

LUTZ, HENRY F., *Textiles and Costumes among Peoples of the Ancient Near East.*

MEAD, CHARLES W., *Peruvian Art.*

MEANS, PHILIP AINSWORTH, *A Study of Peruvian Textiles.*

- METROPOLITAN MUSEUM OF ART, Bulletins.
— — Catalogue of Special Exhibition of Textiles—1915-1916.
— — Chinese Textiles.
— — Handbook of Mohammedan Decorative Arts.
MICHEL, FRANCISQUE, *Le Commerce, La Fabrication et L'Usage des Etoffes de Soie*.
MIGEON, GASTON, *Les Arts du Tissus*.
— — *Les Arts Musalman*.
MUNTZ, EUGENE, *La Tapisserie*.

NASH, PAUL, *Modern English Textiles*.
NEWARK MUSEUM ASSOCIATION, *The Story of Textiles*.

PARK, EDWIN AVERY, *New Backgrounds for a New Age*.
PERCIVAL, MACIVER, *The Chintz Book*.
PETRIE, W. M. FLINDERS, *Ancient Egypt*.
— — *The Arts and Crafts of Ancient Egypt*.
PODREIDER, FANNY, *Storia dei Tessuti d'Arte in Italia (Secoli XII-XVIII)*.
POLO, MARCO, *The Travels of Marco Polo, the Venetian*.
POPE, ARTHUR UPHAM, *An Introduction to Persian Art Since the 17th Century A.D.*

REATH, NANCY ANDREWS, *The Weaves of Hand-Loom Fabrics*.
RIEFSTAHL, R. MEYER, *Early Textiles in the Cooper Museum Collection*.
— — *Persian and Indian Textiles from the Late 16th to the Early 19th Centuries*.
ROBIE, VIRGINIA, *Fabrics Suited to Decorating a Spanish House*.
ROCK, REV. DANIEL, *Textile Fabrics (South Kensington Collection)*.
RODIER, PAUL, *The Romance of French Weaving*.

SABIN, A. K., *The Silk Weavers of Spitalfields and Bethnal Green*.
SMALL, CASSIE PAINE, *How to Know Textiles*.
SMITH, A. D. HOWELL, *Guide to Japanese Textiles (Victoria and Albert Museum)*.
SMITH, EDWARD R., *Daniel Marot*.
SMITH, VINCENT, *A History of Fine Art in India and Ceylon*.
START, L. E., *Coptic Cloths*.

STEPHENSON, C., AND SUDDARDS, F., Ornamental Design for Woven Fabrics.

STEPHENSON, JOHN W., Fabric Ornamentation.

STRANGE, THOMAS ARTHUR, An Historical Guide to French Interiors, Furniture, Decoration, Woodwork and Allied Art.

TEN BROECK, JANE, Modern Fabrics of Empire Design.

— — Spanish Textiles.

DE TÉREY, BENNO, Relations in Decorative Design.

THEOPHRASTUS, Historia Planatarium.

TOWNSEND, W. G. P., Modern Decorative Art in England.

VACHER, SYDNEY, Fifteenth Century Italian Ornament.

VICTORIA AND ALBERT MUSEUM, Brief Guide to the Chinese Woven Fabrics.

— — Brief Guide to the Oriental Painted, Dyed and Printed Textiles.

— — Brief Guide to the Persian Woven Fabrics.

— — Brief Guide to Peruvian Textiles.

— — Picture Books of English Embroideries.

VOLBACH AND KUEHNEL, Late Antique Coptic and Islamic Textiles of Egypt.

WAINRIGHT, SHIRLEY B., Modern Printed Textiles.

WALTON, PERRY, The Story of Textiles.

WARING, J. B., Textile Fabrics.

WARREN, GARNET, The Romance of Design.

WATSON, J. F., Textile Fabrics of India.

WATSON, WILLIAM, Textile Design and Color.

WETTERGREN, ERIK, Modern Decorative Arts of Sweden.

WHITTIER, PRESCOTT, The Language of Textiles.

— — Lectures on Textiles at the Metropolitan Museum of Art.

WIESELTHIER, VALLY, Modern Fabric Designing.

WILCOCK, ARTHUR, Decorative Quality in Fabrics.

— — Style in the Printed Textile.

WINGATE, ISABEL B., Textile Fabrics and Their Selection.

WORNUM, RALPH, Analysis of Ornament.

WOODHOUSE, THOMAS AND MILNE, THOMAS, Textile Design—Pure and Applied.

YATES, JAMES, *Textrinum Antiquorum*—An Account of the Art of Weaving Among the Ancients.

Index

- Abstractions in design, 77, 81, 93, 108, 117, 126, 130, 131
 Acanthus, 109, 210, 281, 282, 290; Gothic, 25; Greek, 25, 26, 28, 295; Roman, 28, 162
 Acetate (cellulose). *See* Rayon
 Adam Brothers (Adelphi), 283, 284, 290
 Aix-la-Chapelle, fabrics in, 12, 111
 Alexander the Great, in Egypt, 9; in Greece, 23; in India, 34, 60
 Alexandria, 13, 61, 89, 93, 95, 96, 98, 99, 105, 110, 122, 128, 141; Greeks in, 13, 89, 122; sericulture, 37; silk in, 13, 37, 78, 97, 99, 109, 120, 121
 Alhambra, 130, 131
 Almond in design, 18, 52
 Alpaca, 102, 344
 America, 300-317; beadwork in, 303; classical influence in, 314; contemporary, 319; cotton in, 59, 67, 301, 304, 306, 308, 310, 316, 323, 335; Dutch influence on, 304; English influence on, 304-309, 313; French influence on, 310, 312, 314; Indian motifs, 301-303, 322; Indian motifs compared to Peru, 102; printed fabrics, 301, 303, 306, 309-312, 323, 329; rayon, 325; samplers, 312; sericulture in, 316; silk in, 39, 306, 308, 312, 316, 317; weaving, 39, 300-317
 Andalusia, 128, 142
 Animals in design, 16, 17, 18, 25, 29, 38, 49, 71, 76, 77, 80, 81, 84, 85, 93, 94, 95, 96, 98, 108, 109, 117, 120, 121, 124, 128, 130, 142, 145, 147, 149, 153, 156, 158, 162, 169, 178, 187, 207, 213, 225, 269, 303
 Anne d'Autriche, 190
 Anne de Bretagne, 185
 Anne, Queen of England, 276, 279
 Anthemion. *See* Honey-suckle
 Antinoë, 10, 12, 98
 Antwerp, 62, 284
 Apocalypse, tapestries of, 206
 Arabesque in design, 81, 86, 114, 118, 124, 125, 126, 133, 134, 135, 187, 195, 210, 270; derivation of, 81, 134
 Arabic script, 81, 117, 118, 121, 124, 125, 126, 129, 130, 131, 132, 142, 143, 146, 147, 151, 154; mock, 134, 173
 Arabs. *See* Mohammed
 Arachne, story of, 23
 Architectural detail in design, 94, 95, 96, 110, 154, 156, 180, 183, 196, 200, 208, 209, 210, 233, 237, 238, 241, 270, 278, 279
 Aristotle, on silk, 23, 33
 Armoriais, 205, 208
 Armure, 245, 281, 284, 327
 Arras, 205, 206
 Art Nouveau, 318
 Artichoke in design, 113, 161, 163, 164, 226; story of, 161
 Ashurr in design, 17
 Assyria, 14-20; cotton in, 60; influence on Egypt, 12, on Greece, 25, on India, 71, on Persia, 76; linen in, 2, 17, 18, 19, 78; silk in, 17, 18, 21; weaving, 60; wool in, 16, 17, 78
 Astrological signs in design, 10, 44, 118, 284
 Athena, goddess of weaving, 23
 Aubusson, 194, 204, 211, 214, 216
 Austria, contemporary, 319, 320, 322
 Avignon, 183, 184
 Babylon, 15, 16, 18, 19, 42
 Babylonia, 14-19, 20, 21, 78
 Bagdad, 38, 42, 80, 81, 82, 119, 157, 329
 Bakst, Leon, 320, 322
 Baldachin. *See* Baudekin
 Bamboo in design, 44, 52, 56
 Bandanna. *See* Bhadana
 Baroque influence, in England, 233; in France, 191, 193-202, 212, 214, 237; in Spain, 135; in Venice, 173, 175
 Basket cloth, 300, 327, 356
 Baskets in design, 94, 195, 237, 241, 247, 270
 Bast, 2, 327, 339, 340
 Batik, 57, 101, 327, 349; in Japan, 57; in Java, 327; in Peru, 101
 Batiste, 328
 Baudekin (Ciclatoun), 42, 157, 183, 328, 334
 Bayeux tapestry, 221
 Beadwork, in America, 303; in Egypt, 7
 Beauvais, 194, 197, 211, 213, 214, 216, 246, 247
 Bee in design, 295, 296

- Bellini, 161, 172
 Bemberg. *See* Rayon
 Bengaline, 329
 Beni Hassan, tomb of, 6
 Berain, Jean, 200, 212
 Berlin work. *See* Embroidery (Crewel)
 Bhadana (Bandanna), 69, 123, 328, 329;
 derivation of, 69
 Biblical references, 18, 19, 61, 80, 93, 95,
 96, 106, 107, 111, 121, 174, 215, 335,
 337
 Birds in design, 7, 11, 12, 25, 38, 50, 52,
 56, 71, 77, 78, 80, 81, 84, 85, 93-96,
 98, 102, 108-110, 117, 121, 122, 124,
 128, 130, 136, 142, 145, 149, 153, 154,
 155, 156, 158, 162, 169, 178, 213, 221,
 225, 238, 242, 245, 251, 299, 303
 Bleaching, 257, 267, 329; in India, 64, 66
 Blue, symbolic use of, 52, 53
 Bombazine, 330
 Bony, 297
 Borneo, 45, 99
 Boucher, 213, 214, 235, 241, 247
 Bouclé. *See* Velvet
 Bouquets in design, 94, 164, 238, 245
 Bourrette, 183, 330
 Brocade, 330; Byzantine, 108, 110;
 Chinese, 43, 46, 47, 49, 53, 74, 306;
 French, 186, 187, 192, 195, 197, 198,
 199, 201, 228, 238, 239, 240, 242, 245,
 246, 247, 278, 281; Indian, 60, 61,
 306; Italian, 153, 157, 165, 173, 174;
 Japanese, 57; Persian, 75, 81, 82, 84,
 85, 116; Peruvian, 101; Sicilian, 144,
 148, 149; Spanish, 132, 137, 138;
 Syrian, 82, 125; Turkish, 82, 113, 114;
 Venetian, 135
 Brocatelle, 136, 165, 175, 179, 190, 226,
 277, 278, 313, 331, 336, 341
 Broché, 246, 247, 330, 331
 Bruges, 62, 180, 198, 205
 Brussels, 205, 206, 209, 212
 Buddha, motifs, 44, 47, 51, 52, 56; re-
 ligion, 44, 45, 51, 52; in Japan, 54-56
 Buklamun, 123
 Butterfly in design, 52, 83, 85
 Byzantine art, 28, 89; Chinese influence
 on, 105; Christian influence on, 107;
 influence on Copts, 120, on Egypt, 95,
 96, 99, 104, on Persia, 76, 104, on
 Sicily, 141, 142, on Syria, 104, on
 Venice, 151, 167, 168; meaning of, 89,
 104, 105; ornament, 29, 104-112;
 Persian influence on, 74, 80, 108
 Byzantium, 29, 30, 88, 104-114, 128;
 Christian influence on, 105, 107; Coptic
 tapestries in, 94, 106; Copts in, 13,
 88-99; cotton in, 106; Graeco-Syrian
 weavers in, 75; linen in, 106; sericul-
 ture, 36, 37, 106, 107; silk in, 30, 35,
 37, 75, 105, 106, 108-111, 142; Vene-
 tian influence, 113, 167, 168; weaving
 in, 35, 106, 107; wool in, 106. *See also*
 Constantinople
 Caesar, Julius, 35
 Cairo, 7, 11, 97, 122, 125, 141
 Calico, 61, 69, 249, 251-254, 264, 307,
 308, 310, 311, 332, 334, 345; deriva-
 tion of word, 69
 Cambric, 332
 Camel's hair, 332, 344
 Camlet, 313, 332
 Camoca, 42, 223, 332, 334
 Canopy in design, 51, 200, 238
 Carlyle on art, 5, 287
 Carnation in design, 113, 161, 178
 Cartouche, 187, 195
 Casement cloth, 332, 345
 Cashmere, 344
 Catacombs in Rome, 29
 Celanese. *See* Rayon
 Cellophane, 326, 332
 Cellulose. *See* Rayon
 Cendal, 40, 333, 351
 Chambray, 328
 Chardonnet, Count Hilaire de, 324
 Charlemagne, 82, 111, 168
 Charles I, 62, 138, 216, 229, 230, 250
 Charles V, 135, 206
 Chenille, 192, 333
 Chevrons in design, 6
 China, 43-54; Christian influence in, 46;
 cotton in, 45, 335; Hellenistic influence
 on, 36; influence on Byzantium, 105, on
 Egypt, 9, on England, 231, 232, 280, on
 France, 235, on Greece, 25, on India,
 72, on Italy, 153, 155, on Japan, 54-56,
 on Lucca, 154, on Persia, 48, 74, 75, 81,
 83, 85, on Venice, 48, 52, 151, 169,
 170; Mohammedan influence on, 46,
 49; Persian influence on, 47, 75; printed
 fabrics, 45; sericulture, 31-33, 36, 41,
 46-48; silk from, 3, 27, 31-42, 43-54,
 97; tapestry, *see* K'ossu; twelve imperial
 ornaments, 50, 51; weaving, 31-42, 44,
 47, 53, 59, 99
 Chiné silk, 246, 333
 Chinoiserie, in England, 255, 277, 278,
 280, 284; in France, 195, 196, 232, 235,
 236, 238, 241, 245, 266

- Chintz, 62, 65, 68, 69, 72, 250, 251, 253, 254, 256, 257, 259, 264, 277, 278, 282, 288, 309, 311, 323, 333, 335; derivation of word, 68, 250; Persian, 86, 242. *See also* Cretonne
- Chippendale, 278, 279, 280
- Christian influence, in Byzantium, 105, 107; in China, 46; in Egypt, 88-93, 95, 96, 99; in Italy, 154; in Persia, 76; in Rome, 28, 29; in Sicily, 140, 147; in Spain, 127, 130-133; symbolic motifs, 29, 93, 107, 108, 154, 155, 161
- Chrysanthemum in design, 52, 56
- Ciclatoun. *See* Baudekin
- Circle in design, 12, 25, 28, 29, 36, 50, 51, 76, 92, 95, 98, 99, 107, 108, 109, 134, 153, 247, 270. *See also* Rondel
- Ciselé. *See* Velvet
- Classicism in design, in America, 314; in England, 255, 257, 280, 281, 283, 286; in France, 185, 236, 244, 245, 247, 269, 270, 289, 290, 295, 298; in Italy, 151; in Spain, 136
- Cleopatra, 3, 10, 34
- Cloth of gold, 334; in Assyria, 17; in Bagdad, 38, 42; in Byzantium, 107; in China, 39, 47, 353; in Cyprus, 27, 229; in England, 221, 224, 225, 229; in France, 187, 190, 198; in Italy, 153, 157, 173, 174, 175, 177, 224, 346, 351; in Japan, 57; in Persia, 81, 82, 84, 85, 183, 353; in Rome, 27, 334; in Sicily, 142, 144, 351; in Venice, 61. *See also* Gold embroidery, Gold thread
- Cloth of silver, 330; in China, 47; in England, 224, 225, 229; in France, 182, 190, 198, 202, 238; in Italy, 160, 173-175, 178, 192; in Persia, 79, 84, 85, 87
- Cloth of Tarsus. *See* Camoca
- Clouds in design, 50-52, 83, 85, 154-156, 170, 237, 238
- Clover in design, 12, 98
- Cnossos, palace of, 20, 21
- Cologne bands (Orphrey webs), 148, 155, 165, 174, 175, 179, 334, 335, 346
- Colonial. *See* America
- Compagnie des Indes, 62, 235, 237
- Cone in design. *See* Pine in design
- Confucius, motifs, 44, 47, 51; religion, 44, 45
- Constantine, 29, 104
- Constantinople, 36, 88, 89, 104-108, 110, 112, 167, 168, 222; Ottoman rule, 112-114; silks of, 75, 97. *See also* Byzantium
- Contemporary embroidery, 323
- Contemporary fabrics, 318-326
- Coptic tapestry, 7, 88-99, 121, 203; compared to Peruvian, 99-103; in Byzantium, 94, 106; in Persia, 94; in Spain, 128
- Copts, 7, 13, 88-99; Byzantine influence on, 95, 120; conquered by Mohammed, 120; Hellenistic influence on, 89, 92, 96, 98; influence on Persia, 98, on Rome, 29, on Spain, 129, 130; meaning of, 88; Mohammedan influence on, 96, 120; Persian influence on, 96; Roman influence on, 92, 95, 98; weaving, 90, 91, 92, 95, 97
- Cordova, 116, 127, 128, 133, 136
- Corduroy, 335, 339
- Cornucopia in design, 191, 245
- Coronation vestments for Holy Roman Emperors, 141, 146
- Cos, gauze of, 33, 34, 48
- Cotton, 335; contemporary, 323; derivation of word, 66, 67; gin, 314; in America, 67, 301, 304, 306, 308, 310, 316, 323, 335; in Assyria, 17, 60; in Byzantium, 106; in China, 45, 335; in Crete, 21; in Egypt, 3, 67, 96, 97; in England, 62, 221, 222, 223, 227, 231, 249, 250, 251, 254, 255, 258, 259, 286-288; in France, 62, 63, 72, 246, 261, 262, 265, 268; in Germany, 174, 321; in India, 3, 17, 45, 59-73, 259, 335; in Italy, 174, 179, 180, 344; in Japan, 57; in Persia, 79, 81, 84, 86; in Peru, 101, 102; in Spain, 136; Mohammedan, 61, 116; sea island, 67
- Cotton prints. *See* Printed fabrics
- Coverlets, American, 311, 312
- Crescent in design, 12, 76, 78, 85, 96, 98, 118, 188
- Crete, 19-22, 140; influence on Greece, 24
- Cretonne, 334, 335; shadow-printed, 335. *See also* Chintz
- Crewel embroidery. *See* Embroidery
- Crimean discoveries, 25
- Cross in design, 12, 25, 29, 95, 98, 107, 121
- Crown in design, 113, 136, 164, 173, 177, 184, 185, 191, 298
- Crusaders, 116, 124, 127, 130, 132, 147, 152, 168, 171, 176, 182, 328, 334, 336
- Cupid in design, 95, 237, 245, 247, 283, 290, 295
- Cuprammonium. *See* Rayon
- Cypress in design. *See* Pine in design
- Cyprus, 27, 229; gold thread, 110, 111, 144, 160, 334

- Dacca, 72, 73
 Daisies in design, 12
 Damascus, 37, 80, 81, 119, 128, 336
 Damask, 119, 336, 341; in Bagdad, 38; in Byzantium, 108, 110; in China, 43, 53, 74; in Damascus, 119; in England, 281, 282, 284, 312, 313; in France, 182, 186, 190, 195, 198, 199, 201, 242, 246, 247, 276, 278; in Italy, 153, 157, 169, 173, 198, 226, 279; in Japan, 57; in Persia, 38, 75, 79, 81, 82; in Sicily, 145, 148, 149; in Spain, 131, 136, 137, 138
 Damietta, 123
 Danzig, textiles in, 49
 David, 247, 291, 292, 296
 Deer in design, 142, 145, 155, 156, 172
 Denim, 336
 Diamond in design, 9, 96, 245
 Diane de Poitiers, 188, 211
 Diaper, 9, 131, 135, 178, 304, 336. *See also* Diasper
 Diasper, 157, 158, 337. *See also* Diaper
 Directoire, 215, 248, 289-291, 292, 293, 298, 314
 Discharge printing. *See* Printing
 Dogs in design, 78, 109, 132, 145, 147, 149, 154, 155, 156, 172
 Dolphins in design, 25, 29, 98
 Double cloths, 101, 357
 Doublet designs, 12, 77, 80, 81, 85, 94, 108, 110, 117, 125, 128, 130, 142, 145, 153, 154, 247
 Dove in design, 29, 112, 237, 248
 Dragon in design, 49, 50, 51, 52, 56, 78, 81, 154, 238
Drap d'or. *See* Cloth of gold
 Drap imperial, 110, 328
 Draw-loom. *See* Looms
 Drill, Drilling, 337
 Du Barry, Madame, 213, 235, 236, 238, 240
 Duck in design, 12, 26, 109, 145, 155, 221
 Dufy, Raoul, 320, 321
 Dutch, influence in America, 304; influence in England, 227, 228, 231, 250, 276; merchants in Japan, 56; printed fabrics, 263; traders in India, 62, 172, 250; velvets, 354; weavers in England, 227
 Dutch East India Company, 62, 263
 Dyeing, 337; American Indian, 302; black, 64; green, 64, 259, 273; in China, 47; in Egypt, 99; in Florence, 160; in France, 183, 184, 201, 264, 266, 273; in Germany, 261; in India, 59, 64-66, 68, 69, 70, 72; in Jerusalem, 19; in Peru, 102, 103
 Eagle in design, 11, 29, 85, 107, 145, 146, 147, 154, 155, 295, 314; two-headed, 78, 132, 145
 Early Lake Dwellers, 2
 East India Company, 62, 250
 Ecclesiastical motifs in design, 29, 93, 106, 107, 111, 121, 153-156, 158, 174, 264, 335, 346
 Egypt, 1-20, 29, 88-99; Assyrian influence on, 12; beadwork in, 7; Byzantine influence on, 95, 96, 99, 104; Chinese influence on, 9, 125; Christian influence on, 88, 93, 95, 96, 99; Copts in, 88-99; cotton in, 60, 67, 96, 97, 335; Grecian influence on, 8-10, 12, 13, 89, 92, 93, 96, 98; Hellenistic influence on, 9, 98; influence on France, 292, 295; linen in, 2-8, 11, 12, 13, 90, 91, 95, 96, 97, 106, 121, 123, 203; Mohammedan influence on, 13, 80, 88, 90, 96, 119-125; Persian influence on, 9, 12, 80, 96, 98; printed fabrics, 8, 9, 121; Roman influence on, 10, 13, 98; sericulture in, 37; silk in, 35, 37, 46, 78, 94, 97, 98, 99, 120, 121, 312, 313; Syrian influence on, 97; tapestries, 7, 11, 88-99, 203; weaving 1-13, 35, 59, 60, 90, 91, 92, 95, 97; wool in, 1, 2, 4, 8, 12, 91, 94-97, 121, 203
 Elephant in design, 71, 109, 111, 122, 142, 147
 Elizabeth, Queen of England, 39, 226-228
 Embroidery, 337, 338; baudekin, 42, 157, 183, 328, 334; Bayeux tapestry, 221; Cologne bands, 148, 155, 165, 174, 175, 179, 334, 335, 346; contemporary, 323; Crewel, 231, 308, 335, 338; early, 7; Flame-stitch, 230, 338, 339; gros point, 231, 338, 346; Hungarian (Fiamma), 230, 339; Jacobean, 251, 279; Kirman, 38; Moslem, 122; petit point, 199, 204, 231, 276, 308, 338, 346
 in America, 307, 308, 312, 313; in Assyria, 16, 17, 19; in Bagdad, 38, 42; in Byzantium, 111, 153; in China, 53, 338; in Egypt, 123; in England, 220-233, 249, 255, 258, 259, 276, 277; in France, 182, 183, 192, 196, 199, 246, 293, 294-296; in Greece, 32; in India, 60, 61, 73; in Italy, 155, 165, 171, 179, 338; in Japan, 58, 338; in Persia, 79, 82, 84, 85, 87; in Peru, 101; in Rome, 29; in Sicily, 123, 144, 148; in Spain, 137

- Empire, 215, 272, 286, 289, 291-299, 314
 England, 220-233, 249-260, 276-288;
 baroque in, 233; Chinese influence on,
 231, 232, 280; chintz, 249-260, chintz
 from India, 68; classicism in, 255, 257,
 280, 281, 283, 286; contemporary fab-
 rics, 319, 322; cotton in, 62, 221, 222, 223,
 227, 249, 250, 251, 254, 255, 258, 259,
 286-288; Dutch influence on, 227, 228,
 231, 250, 276; early fabrics, 220-233;
 Flemish influence on, 228; French in-
 fluence on, 276, 279, 282, 284, 285;
 Georgian fabrics, 276-288; Indian in-
 fluence on, 232, 250, 251, 254; influence
 on America, 304-309, 313; Italian in-
 fluence, 225, 226; linen in, 220, 223,
 233, 249-260, 322; Persian influence
 on, 232, 255, 256, 258, 260; printed
 fabrics, 61, 221, 229, 230, 231, 249-
 260, 278, 280, 281, 282, 306, 322;
 rayon in, 325; Renaissance, 226, 278;
 Roman influence on, 221, 222, 223; seri-
 culture, 229; silk in, 39, 220, 223, 228,
 229, 230, 232, 252, 278, 279, 280, 282,
 285, 287, 288; Spanish influence on,
 227; tapestries, 205, 215, 216, 228, 229,
 260; traders in India, 61-63, 172, 250;
 weaving, 215, 220, 222, 233, 235,
 284, 285, 286; wool in, 62, 205, 215,
 220-223, 225, 226, 227, 229, 230, 231,
 249, 250, 253, 255, 256, 279, 287, 288
 Eugénie, Empress, 298

 Faille, 338, 353
 Fasces in design, 28
 Fatimites, 122, 141
 Feathers in design, 246, 281
 Federal, 314
 Ferronnerie. *See* Velvet
 Field of the Cloth of Gold, 187, 224
 Figures. *See* Human figures in design
 Filler, Filling. *See* Tram, Weft, Woof
 Fish in design, 21, 24, 25, 29, 51, 52, 56,
 93, 102, 107, 221
 Flame-stitch. *See* Embroidery
 Flanders, 92, 183, 187, 203-219, 224,
 225; Cologne bands, 155; influence on
 England, 228, on France, 192; weaving
 in England, 228; wool, 205
 Flax, 2, 6, 17, 67, 301, 305, 306, 317,
 327, 339, 340, 342. *See also* Linen
 Fleur-de-lis in design, 191, 230, 295, 298
 Floats, 339

 Florence, 151, 154, 157-166, 173, 177
 Fontainebleau, 187, 211, 242, 246, 248,
 294, 296
 Fountains in design, 195, 237
 France, 182-219, 234-248, 261-275, 289-
 299; baroque, 191, 212, 214, 237; chintz
 from India, 61, 62, 68, 72; classicism
 in, 185, 236, 244, 245, 247, 269, 270,
 289, 290, 295, 298; contemporary, 318-
 321; cotton in, 62, 63, 72, 246, 261, 262,
 265, 266, 268; Directoire, 289-291;
 Egyptian influence on, 292, 295; Em-
 pire, 215, 272, 286, 289, 291-299, 314;
 Flemish influence on, 192; Gothic, 182,
 185, 186; influence on America, 310,
 312, 314, on England, 255, 276, 279,
 282, 284, 285, on Sicily, 148, on Spain,
 136, 137; Italian influence on, 184, 185,
 186, 188, 190, 193, 197; linen in, 266;
 merchants in India, 62, 63; Oriental in-
 fluence on, 235; printed fabrics, 62, 72,
 180, 246, 252, 255, 261-275, 321, 334;
 Renaissance, 182-192; Roman influence
 on, 290-293, 295, 297, 298; sericulture,
 37, 186, 189, 324; silk in, 37, 38, 182,
 183, 185, 188, 195, 197, 199, 201, 236,
 239, 240, 242, 245, 246, 248, 263, 290,
 291, 294, 295, 297, 298; Spanish in-
 fluence on, 190; tapestries, 92, 183, 187,
 192, 195, 198, 199, 201, 203-219, 241,
 242, 246, 291; weaving, 38, 182-184,
 186, 189, 199, 200, 245, 290; wool,
 183, 205, 263
 Francis I, 37, 185, 187, 188, 211, 224;
 sericulture, 37
 Frankl, Paul, 322
 Franklin, Benjamin, 309, 310
 Fret in design, 6, 25, 51, 92, 98, 102
 Frizé, 339, 344, 345, 347, 353, 357
 Fruit in design, 52, 56, 94, 164, 190, 191,
 194, 241, 245, 248
 Fustian, 136, 339, 355

 Garden of Paradise in design, 44, 71, 85,
 180, 251
 Garden tools in design, 242, 245, 247
 Garland in design, 28, 194, 210, 237, 245,
 248, 295
 Gauze (Leno), 101, 301, 339, 341, 342,
 344, 357; in America, 301; in China,
 48, 53; in Korea, 54; in Sicily, 144; of
 Cos, 33, 44, 48; silk, 128, 288, 339
 Gazelle in design, 17, 85, 112, 142, 156
 Genghis Khan, 81

- Genoa, 168, 176-181, 334; cotton in, 180, 344; Grecian influence on, 176; Ottoman influence on, 178; printed fabrics, 163, 180, 344; velvets, 114, 133, 157, 176, 177, 180, 197, 198, 240, 279, 340, 347; weavers in France, 186
- Genre scenes in design, 147, 148, 214, 237, 238, 241, 242, 245, 248, 255, 266, 269, 278
- Georgian fabrics, 276-288
- Germany, Cologne bands, 155, 165, 174; contemporary fabrics, 319, 321, 325; cotton in, 174, 321; printed fabrics, 263, 264, 321; linen, 264
- Giraffe in design, 142
- Glazing chintz, 86, 311
- Gobelin, 194, 197, 201, 211-219
- Gods and goddesses in design, 93, 96, 271, 283, 295
- Gold embroidery, in Assyria, 16; in Bagdad, 38, 42; in Byzantium, 106, 107, 108, 110; in Egypt, 122; in England, 222, 225; in France, 182, 199, 202, 240, 293; in India, 61; in Persia, 79, 87, 118, 119; in Rome, 27, 30; in Sicily, 144-146, 148; in Spain, 137, 138, 139. *See also* Cloth of gold, Gold thread
- Gold thread, 328, 330, 334; Cyprian gold thread, 110, 111, 144, 160, 334; in the Bible, 18; in China, 47; in Egypt, 122, 123, 124; in France, 238; in Germany, 334; in India, 67; in Italy, 155, 157, 158, 160, 166, 177, 178, 334; in Persia, 87, 329; in Sicily, 144, 145, 146, 148, 149, 160, 334; in Spain, 133, 138, 334. *See also* Cloth of gold, Gold embroidery
- Gothic cathedrals, 6, 182, 183, 186, 208
- Gothic influence, in England, 260, 280; in Italy, 153, 154, 156, 157, 171, 172; in Sicily, 148
- Gothic ornament, 20, 25, 78, 260
- Gothic tapestries, 204, 205, 207-209, 218
- Goths in Italy, 28
- Granada, 130, 131, 133, 136
- Grass cloth, 327
- Greece, 22-26; art in, 6; Assyrian influence on, 25; Byzantine influence on, 104; control of Sicily, 140; influence on Crete, 20, 21, 24, on Egypt, 8-10, 12, 13, 89, 92, 93, 96, 98, 122, on Genoa, 176, on Rome, 27, 28, 29; linen in, 25; Minoan influence on, 24; Oriental influence on, 25; Persian influence on, 25, 28; Persian silk in, 23, 25; printed fabrics, 25; silk in, 23, 34, 35; tapestry, 25, 26; weaving, 35; wool in, 25, 27
- Greek key in design, 25, 51, 98, 295
- Griffin in design, 12, 78, 85, 109, 125, 146, 147, 223, 283, 290, 295
- Gros point. *See* Embroidery
- Grosgrain (Taffeta), 338, 340, 353
- Grotesques in design, 147, 187, 195, 200, 210, 212, 214, 226, 295
- Guilloche in design, 28, 92, 98, 226
- Gynaeceum*, 30, 99, 106, 122
- Haircloth, 281, 313, 340
- Hard silk, 40, 352
- Hare in design, 50, 85, 93
- Haroun-al-Raschid, 72, 82
- Heddles. *See* Looms
- Hellenistic influence, on China, 36; on Copts, 89, 92, 96; on Egypt, 9, 98; on Persia, 78
- Hemp, 45, 57, 301, 303, 327, 340. *See also* Bast
- Henri II, 188, 211
- Henri IV, 188, 189, 190, 191, 211
- Henry VI, silk, 39
- Henry VII, 215, 224
- Henry VIII, 187, 210, 224, 225
- Hepplewhite, 227, 280, 281, 283
- Heraldic emblems in design, 49, 78, 125, 132, 133, 147, 154, 156, 170
- Herodotus, on weaving, 8, 60
- Herring-bone, 353
- Hippocamp, 78, 111
- Hispano-Moresque. *See* Moors, Spain
- Holland. *See* Dutch
- Hom*, 12, 17, 70, 71, 76, 77, 85, 95, 109, 111, 112, 124; symbolic use of, 12. *See also* Tree of Life
- Honey-suckle (Anthemion), 25, 72, 78, 290, 295
- Horse in design, 12, 25, 28, 29, 77, 109, 111, 145
- Hôtel de Tiraz, 80, 123, 144, 146
- Huet, Jean Baptiste, 214, 241, 269, 270, 273, 274
- Huguenots, 39, 188, 196, 214, 227, 232, 252, 284, 285
- Human figures in design, 12, 29, 76, 77, 84, 85, 93, 94, 95, 96, 98, 99, 102, 121, 124, 132, 147, 148, 156, 174, 187, 191, 200, 207, 209, 210, 213, 216, 223, 237, 238, 241, 261, 266, 269, 270, 283, 303
- Hundred flowers brocade, 49, 52
- Hungarian embroidery (Flame-stitch), 230, 339

- Hunter-king in design, 77, 80, 94, 109, 117, 170
- Imperial cloth, 110, 222
- Inca. *See* Peru
- India, 59-73; Alexander the Great in, 34, 60; Assyrian influence on, 71; Chinese influence on, 72; cotton in, 3, 17, 45, 59-73, 259, 335, in England, 259, in France, 261, 266, 268, in Spain, 136; Dutch in, 250; English in, 62, 63, 250; French influence on, 62, 63; influence on England, 232, 250, 251, 254; Mohammedan influence on, 61, 119; Persian influence on, 71, 75, 78; Portuguese traders in, 61, 62, 69, 70, 172, 250; printed fabrics, 59-72, 86, 136, 250, 252, 253, 258, 263, 264, 309, 329, 332, 340; prints in America, 309, 329, in England, 250, 252, 253, 258, in France, 263, 264, in Spain, 136; silk in, 32, 34, 39, 41, 42, 60, 67, 68; tie-and-dye, 45, 69, 329; weaving, 59, 60; wool in, 67, 68, 71
- Indians. *See* America
- Indiennes, 62, 180, 246, 255, 261, 263, 264, 266, 334
- Indigo, 47, 64, 66, 267
- Iris in design, 52, 56, 85
- Islam. *See* Mohammed
- Istanbul, 112, 113, 114. *See also* Constantinople
- Italy, 150-181; Christian influence on, 154; cotton in, 179, 180, 344; influence on England, 225, 226, on France, 184, 185, 186, 188, 193, 197, on Spain, 131-134, 135; linen in, 153, 160, 174, 179; Oriental influence on, 153, 155; Persian influence on, 154, 156; printed fabrics, 163, 176, 180, 344; Renaissance, 127, 134, 150, 159, 160, 163, 164, 165, 168, 171, 176, 179, 180, 186, 209, 234; sericulture, 37, 151, 160, 163, 174; silk in, 37, 39, 151, 153, 155, 157, 158, 160, 162, 163, 164, 165, 171, 172, 174, 177, 178, 179; Spanish influence on, 131-133; tapestries, 208-210; weaving, 150, 153, 158, 162, 164, 169, 173, 174; wool in, 151, 153, 160, 163. *See also* Florence, Genoa, Lucca, Rome, Venice
- Ivy in design, 24, 25, 26, 295
- Jacobean design, 228, 232, 251, 276, 279, 335
- Jacquard, 189, 297, 315, 343
- Japan, 54-58; batiks, 57; Chinese influence on, 54-56; cotton in, 57; in comparison to China, 54; Portuguese traders in, 55; printed fabrics, 57; rayon in, 325; sericulture, 32, 54; silks in, 32, 39, 54-58; weaving, 54; wool in, 57
- Jardinière. *See* Velvet
- Jaspé, 340
- Javanese fabrics, 327, 328. *See also* Batik
- Jerusalem, 18, 19
- Jews, in Babylon, 18; and purple dye, 19
- Josephine, 248, 272, 273, 293, 294, 296
- Justinian, 30, 36, 37, 75, 106, 140; Code, 106; introduction of sericulture, 36
- Jute, 327, 340
- Kalamkar, 10, 70, 340, 346. *See also* Palampore
- Kashmir shawls, 71, 82, 287, 288, 341
- Kendal, 344
- Khotan, silk in, 32
- Kirman, silk in, 38, 82
- Knot in design, 51, 98
- K'ossu, 53, 198, 199, 201, 204, 241, 242, 246, 291, 341
- Kublai Khan, 38, 47, 48
- Lace motifs in design, 163, 174, 177, 191, 194, 244, 248, 298
- La Fontaine's Fables, 213, 246, 261, 269
- Lamé, 238
- Lampas, 245, 281, 341
- Landscape in design, 85, 173, 238, 241, 255, 261, 266, 269, 270, 278
- La Salle, Philippe de, 241, 242, 247, 248
- Laurel in design, 24, 28, 245, 290, 292, 295
- La Vallière, Louise de, 195
- Leaves in design, 7, 44, 76, 98, 154, 158, 190, 269
- Le Brun, 191, 197, 199, 200, 212, 293
- Leno, 341. *See also* Gauze
- Leopards in design, 17, 85, 106, 109, 142, 145
- Lily in design, 18, 56, 57, 107
- Linen, 342; hand-blocked, 249-260, 278; in America, 304, 310, 317; in Assyria and Babylonia, 2, 17, 18, 19, 78; in Byzantium, 106; in Crete, 21; in Egypt, 2-8, 11-13, 25, 90, 91, 95-97, 106, 121, 123, 203; in England, 220, 223, 249-260, 288, 322; in France, 266; in Greece, 25; in Italy, 153, 160, 174, 179; in Persia, 78, 79, 84; in Spain, 136, 137. *See also* Flax

- Lion, in design, 12, 17, 24, 51, 77, 78, 85, 94, 96, 98, 106, 109, 112, 122, 135, 142, 145-147, 149, 155, 156, 290, 295; of Leon, 132
- Lisbon prints, 137
- London, 271, 284, 285
- Looms, 342-344; American, 304; Byzantine, 106; Chinese, 32, 44, 47; Coptic, 91; draw-, 2, 44, 227, 288, 336, 343; earliest, 1, 2, 6, 8, 17, 32, 300, 301, 302, 311; foot-, 2, 343; French, 189, 200; Grecian, 22, 25; hand-, 2, 32, 59, 72, 136, 285, 342, 353; in Egypt, 2, 6; in India, 59, 71, 72; in Italy, 155; in Spain, 136; heddles, 342, 343; Jacquard, 2, 189, 297, 315, 343; Japanese, 54; Persian, 79, 82; Peruvian, 101; power, 23, 315, 343; Roman, 30; Sicilian, 148; tapestry, 204, 206, 209, 216, 218, 219
- Lotus in design, 7, 10, 11, 18, 25, 27, 52, 71, 72, 81, 134
- Louis XI, 37, 184, 206
- Louis XII, 184, 185
- Louis XIII, 190
- Louis XIV, 193-202, 211, 212, 230, 232, 234, 236, 237, 246, 263
- Louis XV, 200, 202, 234-244, 247, 266, 268, 270, 281
- Louis XVI, 236, 242-248, 268, 270, 281, 282, 283, 289, 290, 298, 314
- Lozenge in design, 25, 36, 92, 98, 226, 272, 290
- Lucca, 148, 151, 152-158, 162, 170, 335; Byzantine influence, 153; Chinese influence, 154; Moslem influence, 154; Sicilian influence, 154; weavers in France, 186
- Lyons, 37, 38, 184, 186, 189, 190, 199, 200, 201, 239, 241, 245, 248, 285, 290, 294, 297, 298; sericulture, 37
- Madras, 334; the city, 63, 69, 70
- Maintenon, Madame de, 193, 194, 196, 197, 231
- Malmaison, 296
- Mameluke, 120, 124, 125
- Manchester cotton, 62, 254, 258, 259, 273, 282, 335, 344
- Marie Antoinette, 242-248
- Marie Leczinska, 235, 237
- Marie Louise, 273, 294, 296, 298
- Marot, Daniel, 200, 201, 232
- Marquisette, 344, 357
- Meanders in design, 6, 24, 29, 49, 98, 295
- Medallions in design, 51, 52, 80, 91, 93, 95, 124, 215, 216, 226, 269, 272, 274, 281, 283, 290
- Medici, Catherine de', 188, 211; family, 162; Lorenzo the Magnificent, 162; Mariade', 138, 190
- Mesopotamia, 2, 45, 104, 123
- Mezzari (Meseri), 180, 344
- Mille fleurs* tapestries, 207, 208
- Minoan, 20-23, 26. *See also* Crete
- Minotaur, 20
- Modern. *See* Contemporary
- Mohair, 344
- Mohammed, 96, 115-125; early art, 115-119; in Egypt, 13, 88, 90, 96, 119, 120; in India, 61, 119; in Persia, 76, 79-83, 84, 119; in Sicily, 140, 141, 142, 143, 146; in Spain, 116-119, 126-139; influence on China, 46, 49, on Constantinople, 112-114, on Lucca, 154
- Moiré, 290, 345
- Mongols in Persia, 81
- Monkeys in design, 50, 102, 195, 238, 251, 266
- Monk's cloth, 327
- Moors, 126, 127, 129, 131-134, 136, 137. *See also* Spain
- Moreen, 256, 281, 312, 345
- Morris, William, 216, 259, 287, 318
- Mortlake tapestries, 215, 228, 229
- Moslem. *See* Mohammed
- Mosul, 82, 345
- Mouquette, 345. *See also* Frizé
- Mummy cloth, 3, 8, 90
- Musical instruments in design, 44, 242, 245, 248, 270, 282, 284, 290
- Muslin, 61, 72, 73, 82, 306, 308, 345
- Napoleon, 235, 272, 286, 291-299, 314
- Navajo weaving, 301, 302
- Nebuchadnezzar, 15, 18
- Needlework. *See* Embroidery
- Nereid Textile, 99
- Nero, 16, 28
- Net, 101, 345
- Nineveh, 15, 16
- Normans in Sicily, 142, 143
- Oberkampf, 261-275
- Obi, 58
- Ogive, Ogival bands, 80, 81, 109, 112, 113, 134, 135, 145, 147, 153, 156, 164, 171, 173, 175, 185, 191
- Olive branch in design, 29

- Organdy, 323, 346
 Orphrey webs. *See* Cologne bands
 Ostrich in design, 12
 Ottoman influence in Genoa, 178
 Ottoman textiles, 112-114
 Oudry, Jean Baptiste, 213, 214, 241
 Ovid, on weaving, 23, 219
- Painted fabrics, early, 6, 8, 9, 25; early American, 301, 309; English, 249-260; Indian, 61, 86; Persian, 86; Peruvian, 101. *See also* Printed fabrics
 Paisley shawls, 71, 259, 287, 288
 Palampore, 70, 180, 232, 252, 253, 341, 344, 346; derivation of word, 70. *See also* Kalamkar
 Palermo, 37, 141, 143-148; Moslem textiles in, 122, 154, 170; weavers to Italy, 151; weaving, 107. *See also* Sicily
 Palestine, weavers, 18
 Palm in design, 12, 18, 72, 76, 78, 80, 145, 146
 Palmette in design, 10, 12, 21, 98, 134, 162, 170, 175, 269
 Pamphile, story of, 33, 34
 Panopolis, 13, 96, 97, 98, 121
 Papyrus, 10, 11
 Paris, 180, 189, 206, 211, 263, 264, 320, 325; eighth century silk, 37
 Parrot in design, 85, 125
 Peacock in design, 12, 78, 85, 95, 109, 145
 Pearls in design, 44, 245
 Pekin, 45, 47, 48
 Penelope, story of, 22
 Peppys' Diary, 251, 252
 Percale, 334
 Perrotine block printing. *See* Printing
 Persia, 74-87; Assyrian influence on, 76; Byzantine influence on, 76, 104; Chinese influence on, 48, 74, 75, 81, 82, 83, 85; Christian influence on, 76; Coptic influence on, 96; Coptic tapestries in, 94; cotton in, 79, 81, 84, 86; fabrics of the 16th and 17th centuries, 83-87; Graeco-Syrian weavers in, 75; Hellenistic influence on, 78; influence on Byzantium, 74, 80, 108, on China, 47, 75, on Egypt, 9, 12, 80, 96, 98, on England, 232, 255, 256, 258, 260, on Greece, 25, 28, on India, 71, 75, 78, on Italy, 154, 156, on Moslem art, 119, on Sicily, 74, 141, on Spain, 74, 128, on Venice, 169, 170; linen, 78, 79; Moslem rule in, 76, 79-84, 119; printed fabrics, 86, 87, 242; Saracenic influence on, 78, 80; Sassanian era, 274-279, 280; sericulture, 79; silks from, 35, 37, 74-79, 80, 81-84, 96, 105; silks in England, 39, 280; silks in Greece, 23, 25; Tartar influence on, 48; weaving, 74, 75, 79, 83, 84; wool, 78, 84
 Peru, 45, 99-103; batiks, 101; compared to Copts, 99-103; cotton in, 101, 102; painted and printed fabrics, 45, 101, 102; tapestries, 99-103; weaving, 99, 101, 103; wool in, 102
 Perugia, textiles in, 49, 155
 Petit point. *See* Embroidery
 Phoenicians, 19, 20, 21, 140
 Phoenix in design, 11, 51, 81, 85, 170; symbolism of, 11
 Pick, 342. *See also* Looms
 Picotage (Piqué work), 257, 266, 267
 Pile fabrics, 347, 357; contemporary, 323; early, 97; Peruvian, 101. *See also* Velvet
 Pillement, 241, 242, 245, 247, 277, 284
 Pine in design (cone), 71, 72, 78, 80, 85, 86, 145, 288, 341
 Pintado, 69, 70, 252, 334, 347; derivation of word, 69, 70
 Piqué work. *See* Picotage
 Plateresque, 134
 Pliny, accounts of textiles, 8, 9, 11, 27, 28, 34, 35, 63, 97, 334
 Plush, 138, 323, 347, 355
 Polo, Marco, 38, 39, 44, 45, 47, 48, 55, 82, 169, 170, 332
 Pomegranate in design, 18, 19, 25, 78, 81, 134, 135, 138, 145, 153, 158, 160, 161, 164, 175, 177, 178, 191
 Pompadour, Madame de, 213, 235-237, 240, 241, 263
 Pompeii, 26, 27, 28, 95, 244, 245, 247, 257, 283, 289, 290, 298, 314
 Pongee, 41, 347
 Poplin, 178, 329, 347, 351
 Portuguese prints, 263; in America, 309
 Portuguese traders, in India, 61, 62, 69, 70, 172, 250; in Japan, 55
 Printed fabrics, American, 306, 309-312, 323, 329; Dutch, 263; early, 6, 8, 9, 25, 28, 29; Egyptian, 8, 9, 121; English, 61, 229, 230, 231, 249-260, 278, 280, 281, 282, 306, 322; French, 62, 72, 180, 246, 252, 255, 261-275, 321, 334; Genoese, 163, 180, 344; German, 263, 264, 321; Grecian, 25; Indian, 59-72, 86, 136, 250, 252, 253, 258, 263, 264, 309, 329, 332, 340; Italian, 163, 176, 180, 344; Persian, 86, 87, 242; Peruvian, 45, 101, 102; Portuguese, 263, 309; Spanish, 136, 137, 138

- Printing (methods of), 348-349; batik, 57, 101, 327, 349; bhadanna, 329; contemporary, 323; copper-plate, 255, 267, 268, 310, 311, 334, 348; cylinder, 102, 256, 269, 316, 334, 348; direct, 348; discharge, 348; gold and silver, 86; hand-block, 334-348, in America, 311, in China, 45, in Egypt, 8, 9, in England, 249-260, 278, 322, in France, 267, 321, in Germany, 263, 321, in India, 60, 64, 65, 66, 68, 69, 70, 86, 340, in Japan, 57, in Peru, 102; kalamkar, 70, 346; mordant, 9, 63, 349; palampore, 70, 346; perrotine block, 348; pintado, 69, 347; reserve in England, 252, in France, 262; resist, 327, 349, in China, 45, in Egypt, 121, in India, 63, 66, 69, in Japan, 57; screen, 323; stencil, 57, 63
- Purple. *See* Tyrian purple
- Pyre (Fire Altar), 76
- Quadrige in design, 29, 109
- Ramie, 327
- Raphael, 161, 164, 209, 210; tapestry cartoons, 209, 216, 229
- Raw silk, 33, 39, 42, 45, 46, 97, 153, 160, 352
- Rayon, 324, 325, 349, 350; Bemberg, 325, 350; Celanese, 325, 350; cellulose, 349, 350; cuprammonium, 325, 350; in America, 325; in England, 325; in Japan, 325; spun, 325; viscose, 325, 349
- Red, symbolic use of, 52, 53
- Regence, 202, 234, 235, 255
- Regency, 286, 287
- Renaissance, English, 226, 278; French, 182-192; Italian, 127, 134, 150, 158, 159, 160, 162, 163, 164, 165, 168, 171, 176, 179, 180, 186, 209, 234; Spanish, 127, 135; tapestries, 204, 207, 208-210, 215, 219
- Rep, 300, 347, 351, 356. *See also* Poplin
- Resist-dyeing. *See* Printing
- Restoration, 298
- Revel, Jean, 241
- Revocation of the Edict of Nantes, 39, 196, 201, 214, 232, 252, 284, 307
- Ribbons in design, 52, 83, 154, 173, 177, 194, 237, 238, 242, 245, 248, 270, 281, 283, 290
- Rock and shell in design (Rocaille), 201, 234, 237, 241
- Rococo, 191, 212, 214, 234-242, 243, 244, 278, 280, 281, 298
- Rodier, Paul, 321
- Roger II, 143, 144
- Romanesque, 95, 105, 110. *See also* Byzantine
- Rome, 26-30, 95, 104, 107, 334; catacombs of, 29; Christian influence on, 28, 29; Coptic influence on, 29; Grecian influence on, 27, 28, 29; influence on Copts, 92, 95, 98, on Egypt, 10, 13, 98, on England, 220, 221, 223, on Florence, 162, on France, 290-293, 295, 297, 298; silk in, 27-30, 34, 35, 75, 80, 97; wool, 27
- Rondel in design, 71, 76, 77, 79, 80, 81, 92, 93, 95, 96, 107, 108, 109, 110, 111, 117, 128, 130, 132, 142, 147, 153, 154, 221, 226, 247; symbolism of, 76
- Roses in design, 29, 52, 113, 161, 230, 231; Tudor, 224, 226
- Rosette in design, 9, 10, 12, 21, 25, 92, 98, 109, 121, 134, 226
- Rouen, 201, 252, 272
- Rubens, 138, 229, 230
- Safidian rule in Persia, 83
- St. Cuthbert's shroud, 220
- Saladin, 124
- Salamander in design, 185, 187
- Samit, 351
- Samplers (American), 312
- Sandal. *See* Cendal
- Santa Sophia altar hangings, 106
- Saracenic work, 203, 204
- Saracens, 132, 140-149, 214, 351; in Persia, 78, 80; in Sicily, 140-149; motifs, 49, 80; silks, 37, 141, 148; tapestries, 203, 204
- Sarsenet (Sarcenet), 307, 333, 351
- Sassanians in Persia, 74-79, 84
- Satin, 40, 42, 53, 85, 86, 116, 169, 178, 190, 198, 230, 240, 245, 278, 281, 282, 284, 290, 293, 308, 323, 351
- Satine (Sateen), 352, 355
- Savonnerie, 191, 192
- Scarabaeus in design, 11
- Scroll in design, 28, 44, 50, 78, 81, 98, 102, 109, 118, 133, 169, 178, 187, 194, 195, 210, 237
- S scroll in design, 121, 161, 164, 173, 177, 184
- Scutari, 113, 114
- Seaweed in design, 21, 52
- Semé patterns, 36, 85, 164, 179, 191, 248
- Semiramis, 15
- Sens, fabrics in cathedral, 12, 82

- Serge, 229, 307, 308, 352
 Sericulture, 40, 41, 42; in America, 316; in Byzantium, 36, 37, 106, 107; in China, 31, 32, 33, 36, 41, 46, 47, 48; in Egypt, 37; in England, 229; in France, 37, 186, 189, 324; in Italy, 37, 151, 160, 163, 174; in Japan, 32, 54; in Lyons, 37; in Persia, 79; in Sicily, 37; in Spain, 37, 128; in Syria, 37; introduction of, 36
 Shadow-print, 333, 355
 Shed. *See* Looms
 Shell in design, 21, 28, 277, 283
 Sheraton, 282
 Sherwin, William, 252
 Shikii, 41
 Shinto in Japan, 54-56
 Shuttle. *See* Looms
Siamoises, 266
 Sicily, 140-149, 152; Byzantine influence on, 141, 142; Christian influence on, 140, 147; embroidery in, 123, 144, 148; Fatimites in, 122, 141; French influence on, 148; gold thread in, 144, 145, 146, 148, 149, 160, 334; Gothic style in, 148; Grecian influence on, 140; influence on Lucca, 154; Mohammedan influence on, 140-143, 146; Persian influence on, 74, 141; Phoenicians in, 140; sericulture in, 37; silk in, 37, 125, 141, 146, 148; Spanish influence on, 142; weaving, 107, 141-144, 148
 Silk, 31-42, 352; early fabrics, 99; silk in America, 39, 306, 308, 312, 316, 317; in Assyria and Babylonia, 17, 18, 21; in Byzantium, 30, 35, 37, 75, 94, 105, 106, 108-111, 142; in China, 3, 27, 31-42, 43-54, 97; in Crete, 21; in Egypt, 3, 12, 13, 35, 37, 46, 78, 94-99, 109, 120, 121; in England, 39, 220, 223, 228, 229, 230, 231, 232, 252, 278, 279, 280-282, 285-288; in France, 37, 38, 182, 183, 185, 188, 195, 197, 199, 201, 236, 239, 240, 242, 245, 246, 248, 263, 290, 291, 294, 295, 297, 298; in Greece, 23, 34, 35; in India, 32, 34, 39, 41, 42, 60, 67, 68; in Italy, 37, 39, 151, 153, 155, 157, 158, 160, 162-165, 171, 172, 174, 177, 178, 179; in Japan, 32, 39, 54-58; in Persia, 23, 25, 35, 37, 39, 74-79, 80-84, 96, 105, 280; in Rome, 27-30, 34, 35, 75, 80, 97; in Sicily, 37, 141, 146, 148; in Spain, 127, 128, 131-133, 135-137; in Syria, 20, 28, 32, 37, 45; in Venice, 61; Moslem, 117-125; spun, 330; weighted, 42
 Singerie, 238, 266
 Spain, 126-139; baroque, 135; Christian influence on, 127, 130, 131-133; classicism in, 136; Coptic influence on, 128-130; cotton, 136; French influence on, 136, 137; gold thread in, 133, 138, 334; Hispano-Moresque, 127, 129, 131, 134; influence on England, 227, on France, 190, on Sicily, 142; Italian influence on, 131-134, 135; linen in, 136, 137; Moslem influence on, 116, 119, 126-139; Persian influence on, 74, 128; printed fabrics, 136-138; Renaissance, 127, 135; sericulture, 37, 128; silk in, 37, 127, 128, 131, 132, 133, 135, 136, 137; Syrian weavers in, 128, 129; tapestries, 128, 138, 139; weaving, 127, 128, 131, 137; wool, 136, 157
 Sphinx in design, in Egypt, 11, 12, 295; in Greece, 11, 24
 Spinning, 220, 256, 259, 273, 314, 315, 352
 Spitalfields, 279, 280, 285, 286
 Squares in design, 12, 25, 36, 52, 87, 91, 93, 95, 130, 270
 Stag heads in design, 26
 Stars in design, 6, 12, 25, 36, 50, 91, 93, 95, 98, 121, 126, 130, 131, 132, 295, 296
 Stencils, in India, 63; in Japan, 57
 Strié, 352
 Stripes in design, 68, 79, 118, 124, 132, 142, 191, 223, 236, 237, 238, 240, 245, 248, 270, 281, 282
 Sun's rays in design, 147, 148, 154, 155, 156
 Swags in design, 192, 247, 248, 281, 282, 283, 290
 Swans in design, 132, 145, 147, 155
 Swastika (Fylfot), 12, 51, 98, 102
 Sweden, contemporary, 319, 322
 Symbolism in design, Ashurr, 17; Bee, 295, 296; Canopy, 51; Chou, 51; Circle, 29, 76; Crescent, 118; Cross, 29, 107; Dove, 29; Dragon, 49; Eagle, 29, 146, two-headed, 78; Fish, 29, 52, 93, 107; Fleur-de-lis, 191; *Hom*, 12, 85; Knot, 51; Laurel, 28; Lily, 107; Lotus, 10, 52; Peacock, 95; Phoenix, 11; Religion in China, 43, 44; in Peru, 102, in Rome, 29; Serpent, Tree; Swastika, 51; Tortoise, 52; Tree, 76; Twelve imperial ornaments, 50; Uraeus, 11, 12; Waves, 10, 93; Wheel, 44; Wreath, 29

- Syria, Byzantine influence on, 104; influence on Egypt, 97; sericulture, 37; silk from, 20, 28, 37, 46, 125; velvets, 82; weavers, 18, 75, 123, 125; weavers in Egypt, 97; weavers in Spain, 128, 129
- Taffeta, 86, 173, 190, 198, 239, 240, 242, 246, 323, 338, 340, 352, 353
- Taoism, motifs, 44, 47, 51, 52; religion, 43, 44
- Tapestry, 203-219, 353; Armorial, 205, 208; Assyrian, 17, 18; Aubusson, 194, 204, 211, 213, 214, 216; Babylonian, 16; Beauvais, 194, 197, 211, 213, 214, 216, 246, 247; Chinese (K'ossu), 53, 198, 199, 201, 204, 241, 242, 246, 291, 341; Coptic, 7, 88-99, 121, 203, in Byzantium, 94, 106, in Spain, 128; Egyptian, 7, 11, 88-99, 203; English, 205, 215, 216, 228, 229, 260; Flemish, 92, 183, 187, 203-219, 224, 225; Fontainebleau, 187; French, 92, 183, 187, 188, 191, 192, 195, 198, 199, 201, 203-219, 241, 242, 246, 291, 295; Gobelin, 194, 197, 201, 211-219; Gothic, 204, 205, 207-209, 218; Grecian, 25, 26; Italian, 208-210; Mille fleurs, 207, 208; Mortlake, 215, 228, 229; Peruvian, 99-103; Renaissance, 204, 207, 208, 210, 215, 219; Saracenic, 203, 204; Spanish, 128, 138, 139
- Tartariums, 48, 353
- Tartars, 48, 353
- Tent-stitch, 346. *See also* Embroidery, Petit point
- Terry, 347, 353, 355
- Thistle in design, 161, 175, 231
- Thousand and One Nights stories, 84, 353
- Three balls, story of, 114, 162
- Tiger in design, 17, 50, 77, 109
- Tinnis, 123
- Toile de Jouy, 137, 241, 242, 246, 255, 259, 261-275, 290, 294, 298, 310
- Toile de Perse, 72, 86, 255, 334
- Toiles de Gênes (Mezzari), 176, 180, 344
- Torch in design, 245, 283, 290, 295
- Tortoise in design, 52
- Tours, 27, 37, 184, 201
- Tram, 338, 353. *See also* Weft
- Tree of Life in design, 7, 12, 17, 70, 71, 76, 86, 109, 111, 124, 180, 231. *See also* "Hom"
- Trees in design, 12, 17, 25, 155, 156, 221, 237
- Trellis in design, 25, 121, 177, 195, 283
- Trianon, 197, 242, 243, 244
- Tulip in design, 85, 113, 170
- Turban cloths, 61, 67, 68, 72, 122, 123
- Turkey-work, 229, 308, 353
- Turks. *See* Ottoman
- Tut-Ankh-Amen, tomb of, 7
- Twelve Imperial Ornaments, 50
- Twill weave, 352, 353, 356
- Tye-and-dye, 45, 69, 101, 329, 348, 354
- Tyrian purple, 18, 19, 106
- Unicorn (Khilin) in design, 51, 81, 109
- Ur, weavers in, 16
- Uraeus in design, 11
- Van Orley, Bernard, 210
- Vase in design, 50, 158, 163, 173, 178, 185, 191, 194, 238, 242, 278, 284, 290
- Vegetables in design, 237
- Velasquez, 135, 138
- Velours, 354. *See also* Velvet
- Velvet, 173, 347, 353, 354, 357; American, 313; Anatolian, 82; Bagdad, 38, 42; Bouclé, 177; Byzantine, 108; Chinese, 53; Ciselé, 177, 178, 334, 347; Coptic, 97; Dutch, 354; earliest, 97; English, 224, 225, 226, 229, 230; Ferronnerie, 175, 178, 338; Flemish, 180, 198; Florentine, 162, 165, 166, 224; French, 190, 192, 198, 246, 290, 291, 293; Genoese, 114, 133, 157, 176, 177-180, 197, 198, 240, 279, 340, 347, 354; Italian, 149, 157, 165, 172, 188, 224, 226, 276, 277; Japanese, 57; Jardinière, 178, 179, 340; Lucchese, 157; Persian, 81, 82, 84; Spanish, 138; Syrian, 82; Turkish, 114, 173; Utrecht, 354; Velours de Gênes, 176, 177, 347; Venetian, 133, 157, 171, 172, 174, 175, 197
- Velveteen, 339, 347, 354, 355
- Venice, 38, 107, 151, 167-176; baroque, 173, 175; Byzantine influence on, 151, 167, 168; influence on Byzantium, 13; Oriental influence on, 48, 52, 151, 169, 170; Persian influence on, 169, 170; traders, 48, 61
- Vernet, Horace, 274
- Versailles, 196, 197, 199, 212, 239, 243, 246, 247, 265, 274, 293, 294
- Victorian, 21
- da Vinci, Leonardo, 185, 187
- Vines in design, 26, 49, 71, 81, 93, 98, 109, 113, 135, 171, 231, 245
- Viscose. *See* Rayon
- Voile, 355

- Warp, 355, 356. *See also* Weaving
 Warp-print, 333, 355. *See also* Chiné Silk
 Warring motifs in design, 17, 18, 25, 44, 50, 76, 193
 Warriors in design, 18, 25, 76, 77, 80, 93, 94, 98, 109, 117
 Washington, George, 310, 311, 315, 316
 Watteau, 200, 241, 277
 Waves in design, 10, 21, 24, 26, 51, 92, 98, 102; symbolic use of, 10
 Weaving, 327-358; Coptic, 90, 91, 92, 95, 97; earliest, 1, 2, 3; in America, 300-317; in Assyria and Babylonia, 14-19, 23, 60; in Byzantium, 35, 106, 107; in China, 31-42, 44, 47, 53, 59, 99; in Constantinople, 75; in Egypt, 1-3, 13, 35, 59, 60, 90, 91, 92, 95, 97; in England, 215, 220, 223, 233, 254, 284, 285, 286; in Flanders, 227, 228; in Florence, 159, 160, 162, 164, 165; in France, 38, 182-184, 186, 189, 196, 199, 200, 239, 245, 290; in Genoa, 177; in Greece, 35; in India, 59, 60; in Italy, 150, 153, 155, 157, 158, 159, 162, 164, 169, 173, 174, 177; in Japan, 32, 54; in Persia, 74, 75, 79, 83, 84; in Peru, 99, 101, 103; in Sicily, 107, 141-144, 148; in Spain, 127, 128, 131, 137; types of—leno, 357; pile, 357; satin, 351, 356; tapestry, 216-218; twill, 353, 356
 Weft, 338, 353, 356, 357. *See also* Filler, Tram, Woof
 Weiner Werkstätte, 320, 321
 Wheel in design, 44, 154
 William and Mary, 231, 232, 250, 253
 William of Wyckham, 224
 William the Conqueror, 221
 Woof, 338. *See also* Filler, Tram, Weft
 Wool, 358; in America, 301, 304, 307, 315, 317, 323; in Assyria, 16, 17, 78; in Byzantium, 106; in Crete, 21; in Egypt, 1, 2, 4, 8, 12, 91, 94, 95, 96, 97, 121, 203; in England, 62, 205, 215, 220, 223, 225, 226, 227, 229, 230, 231, 249, 250, 253, 255, 256, 279, 287, 288; in Flanders, 205; in France, 183, 205, 263; in Greece, 25, 27; in India, 67, 68, 71; in Italy, 151, 153, 160, 163; in Japan, 57; in Persia, 78, 84; in Peru, 102; in Rome, 27, 29; in Spain, 136, 137
 Worsted, 223, 231, 307, 308, 312, 313
 Wreath in design, 29, 269, 282, 283, 290, 292, 295
 Yellow, symbolic use of, 52, 53
 Yezd, 82
 Zebra in design, 12, 98
 Zen in Japan, 54, 55
 Zoroaster, 76

UNIVERSAL
LIBRARY



128 138

UNIVERSAL
LIBRARY